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REPORT

OF THE

COMMISSION

TO

EXAMINE INTO THE ORGANIZATION, SYSTEM OF DISCIPLINE,
AND COURSE OF INSTRUCTION

OF THE

UNITED STATES MILITARY ACADEMY

AT

WEST POINT.



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1881.

Re April 12/81

The H H and M
Capt. C. C. C.

REPORT

OF

THE COMMISSION

APPOINTED



Under the eighth section of the act of Congress of June 21, 1860, to examine into the organization, system of discipline, and course of instruction of the United States Military Academy at West Point.

DECEMBER 13, 1860.—Ordered to be printed.

To the honorable the President of the Senate and Speaker of the House of Representatives of the United States.

The Commission, consisting of—

Hon. JEFFERSON DAVIS, United States Senate ;
Hon. SOLOMON FOOT, United States Senate ;
Hon. HENRY WINTER DAVIS, House of Representatives ;
Hon. JOHN COCHRANE, House of Representatives ;
Major ROBERT ANDERSON, First Artillery, U. S. A. ;
Captain A. A. HUMPHREYS, Topographical Engineers, U. S. A. ;

Which was appointed by authority of the eighth section of the act approved June 21, 1860, chapter 163, as follows:

"And be it further enacted, That upon the passage of this act, or as soon thereafter as practicable, a Commission shall be appointed in the manner hereinafter designated, to consist of two Senators, two members of the House of Representatives, and two officers of the Army; which Commission shall examine into the organization, system of discipline, and course of instruction of the United States Military Academy, with a view to ascertain what modifications or changes, if any, are desirable in order that the Academy shall best accomplish the objects of its establishment. That the said Commission shall report the result of its examination to the President of the Senate and Speaker of the House of Representatives. That the commissioners from the Senate shall be appointed by the President of the Senate, those from the House by the Speaker of the House, and those from the Army by the President of the United States."

Having discharged the duties assigned to them, report:

That they met at the Military Academy, West Point, on July 17, 1860, and organized on the 18th, by the election of Hon. Jefferson Davis as president, and Lieutenant J. C. Ives, United States Army, as secretary. They there pursued their investigations, meeting regularly until September 5, 1860—as will appear by their journal—when, after having examined a number of witnesses and made satisfactory inspection of

the various departments of the institution, they adjourned to meet again in Washington City on November 28, 1860.

The Commission, after a laborious investigation and due reflection, submit the following report, containing the result of their investigation of the several subjects committed to them:

ORGANIZATION.

The distribution of the responsibilities and duties of the officers and cadets of the Academy was found generally to be well adapted to the ends of instruction, accountability, and discipline; and the division of the hours of study, recitation, military exercises, recreation, and repose of the cadets, such as to secure the best economy of time. Practical military instruction is given at hours when relaxation from mental toil is needful. It includes gymnastics, the use of small-arms, and riding, which, while requisite to complete the education of the soldier, serves to develop physical energy and preserve health, without interfering injuriously with the course of studies.

The military discipline of the Academy teaches the regularity and exactness so essential to the soldier, and secures the quiet and uniformity in the hours of study so necessary for close mental occupation.

A distinctive feature in the administration of this institution belongs to existing organization of the corps of cadets, by division into companies for practical instruction in tactics. This involves the appointment of officers and non-commissioned officers by selection from the corps, upon whom are devolved the duties ordinarily performed by those grades respectively in the companies of the Army, and the privates are required by detail to perform the ordinary duties of the sentinel. The maintenance of good order is thus to no small extent dependent upon the cadets themselves, and as the enforcement of the regulation is made a military duty, which it is inconsistent with soldierly character to neglect, its performance does not expose the individual to the odium of his associates, but is with him a point of professional pride. From this it follows that there cannot be a distinct line of division between the governing and the governed, and to that, it is believed, may to no small extent be attributed the honorable sentiment which pervades the young gentlemen here trained for the future command of our armies.

The health of the corps, as exhibited in the statement of mortality; the physical efficiency of the graduates, as manifested in the arduous duties performed by our troops on the frontier; and the high standard of scientific proficiency which the Academy is acknowledged to have attained, sufficiently attest the wisdom of the system on which the Academy has been administered. In recommending modifications of its organization and administration, the Commission have, therefore, in keeping with the wholesome maxim to "let well enough alone," abstained from proposing radical changes, and have sought to bring the law into conformity with the practice which necessity has created, and with the progress which experience has plainly indicated. Thus finding that the Academy had, in fact, ceased to be exclusively a school of engineers, and that, though nominally remaining the headquarters of the Corps of Engineers, it had long since ceased to be the station of the chief of that corps; and that the Superintendent no longer became such by virtue of his rank, but was *selected*, without other conformity to the acts of 1802 and 1812 than that of being an officer of engineers; and that the professors, instead of being, as was originally designed, officers of engineers, had, in all cases, ceased to be officers of the Army upon be-

coming professors of the Academy; and regarding the departure in these cases from the original design of the law as the result of military requirements which must continue—and in view of the fact that scientific officers are no longer only to be found in the Corps of Engineers—the Commission having deemed it preferable to confer authority to *select* the Superintendent, and to enlarge the field of choice so as to embrace all officers of the Army who have graduated at the Academy and have acquired reputation by the pursuit of science, and who have thus manifested the academic qualities requisite in the Superintendent. In the case of the selection of a professor from the Corps of Engineers, the law permits him to retain his commission, but does not extend the same privilege to other officers of the Army. In practice the officer of engineers has been obliged to resign his commission in that corps. It is proposed that the law shall conform to the practice, and that the discrimination which it makes in this regard between the officers of engineers and those of other corps of the Army shall no longer exist.

By the proposed modification the law will have no restraint on the power to select a professor, and will place all professors, so far as relates to tenure of office, on the same footing. Believing it to be generally desirable, and in some of the departments necessary, to select the professors from among the officers of the Army, it is proposed to compensate for the sacrifice involved in the surrender of an Army commission by providing for retirement with a continuing salary after twenty-five years of faithful service. The commandant of cadets, the assistant professors, the instructors and assistant instructors, are, as heretofore, to be officers of the Army, temporarily detached from their corps to do duty, as assigned, at the Military Academy.

Thus is provided a mixed organization, in which the scientific and military, the permanent and temporary elements are sought to be blended in such proportions as may best conduce to the great end of the Academy, the training of the warrant officers of the Army so as best to qualify them for the duties of commissioned officers of all arms of the military service.

The law which fixes the authorized strength of the corps of cadets provides for one cadet from each Congressional district, and one from each Territory, one from the District of Columbia, and “an additional number of cadets, not exceeding ten, to be appointed at large.” There seems to have been no settled construction of the clause authorizing the additional number, but the most restricted interpretation has been to appoint ten annually at large, or without reference to any condition of residence on the part of the appointee. It is proposed to fix by law the number of appointments to be made “at large,” and so limit them to ten for each year.

In view of the increase in the number of Army corps, and consequently in the number of vacancies among the commissioned officers to be annually supplied, and in view of the fact that the division of the corps of cadets into five instead of four classes proportionately diminishes the number of graduates, it is proposed to increase the number of cadets by authorizing two from each State in addition to those now authorized for the Congressional districts. This number will perhaps somewhat exceed that indicated by the disparity between the number of graduates and that of the vacancies occurring in the Army; but if the views of the Commission in relation to a higher standard of proficiency should be carried out, the number of graduates will be thereby reduced, and the possibility of obtaining that higher proficiency be pro-

moted by the increase in the number of those annually admitted to compete for places in the higher classes.

It is proposed to substitute a Commission for the Board of Visitors which shall each year examine into the condition of the Academy in all its departments; the Commission to consist of a Senator and a member of the House of Representatives, of two officers of the Army, distinguished for scientific and practical military knowledge, and two civilians, eminent for attainment in mathematical and physical science. The authority of this body should extend to the revision of the programmes, methods of instruction, and text-books, and it should report upon all that relates to the instruction, training, discipline, and administration of the Academy. It is believed that the establishment of such a Commission would tend to insure great efficiency on the part of those intrusted with the conduct of the Academy, the maintenance of a high order of discipline, an elevated standard of scientific and military instruction, and thorough proficiency in the prescribed course of study.

DISCIPLINE.

The record of the Commission shows that an impression prevails among the cadets that officers occasionally report them on suspicion, with a view to ascertain whether they are guilty of violating a regulation.

Paragraphs 286 and 287, which seem to require a cadet to state in his excuse whether he be guilty or not, tend to countenance that supposition. The cadets are further under the impression that when they deny the correctness of a report their word is not always taken, and the report is allowed to stand against them, without any investigation, and in derogation of their character for veracity.

It is probable that both these impressions are erroneous, and grow out of ignorance of the exact facts of the case supposed to justify them. Upon an examination of the cases brought to the notice of the Commission, in connection with the last mentioned and graver impression, it was found not to be justified. The Commission consider it important to remove all cause for the future existence of either of these impressions. They have therefore proposed a modification of the regulations, and think it only necessary to add that, it being a point of honor with the cadet to state the exact truth in presenting an excuse, it is incumbent upon the officer never to give a report unless he is confident of the fact, and if it happens that a cadet denies a report involving a matter of fact respecting which he must, better than all others, know the truth, a question of veracity is raised, which the good of the service requires should be settled. The Commission, therefore, recommend that the Commandant of Cadets shall be required to report such cases to the Superintendent, whose duty it shall be to ask for a court to investigate the matter.

It is recommended that the last three lines of paragraph 212, and the first clause of the last sentence of paragraph 238, Academic Regulations, be rescinded, so that no cadet shall be required to sign a certificate as to the manner in which he has performed any duty.

It is recommended that paragraph 287 be revoked, and that paragraph 286 be modified so as to read as follows:

"A cadet shall not be required to make an explanation or excuse for any delinquency for which he may be reported; but if he desire to do so, he shall offer it verbally to the Commandant of Cadets not later

than his first orderly hour after its last publication. If satisfactory, the commandant will erase the report. If not satisfactory, the cadet may, on that or on the following day, make his explanation in writing, which, with the remarks of the reporting officer, if still unsatisfactory, the commandant shall forward, with the abstract of delinquencies, to the Superintendent for his decision, which shall be final in the case. No excuse will be received after the time thus provided for, unless sickness, absence, or some other unavoidable cause, which must be stated in the excuse, shall have prevented its presentation as herein required, in which event it must be rendered as soon as the cadet's health, absence from the post, or other unavoidable cause, shall enable him to do so."

It is the opinion of the Commission that it is the duty of the professors, not less than the officers of the Academy, to report any cadet for conduct coming under his notice, prejudicial to good morals or the discipline of the Academy. From this duty the professors are not relieved by the omission of the regulation requiring them to report as officers specially charged with the discipline of cadets. A professor would gravely err who would permit any vicious conduct or gross misbehaviour to pass unrebuked or unreported, and such a misapprehension of his duties would greatly tend to realize the fears expressed by the Superintendent.

The Commission are happy to have ascertained, from more than one of the professors, that the latter view their duties in the same light with the Commission.

Reporting should not alone be relied on to maintain discipline; nor should it be regarded as a method of instruction, but rather as the consequence of disobedience or wanton neglect of duty.

The system of demerit is designed to insure a faithful observance of good order and discipline at the Academy, and it is recommended that there shall be no restriction which would confine its operation to cases specified in published regulations, as this tends to disregard and even disobedience of lawful orders.

It is an anomaly in the system that the demerit marks for a delinquency of which a cadet is found guilty by a court-martial, are erased on the finding of the court. This places a cadet convicted of a grave delinquency upon a better footing than one guilty of a less offense, for which he is not brought to trial. It is recommended that the regulations be so altered that the demerit marks shall not be removed upon a judgment of guilty, but only upon an acquittal. Demerit marks are not, in any sense, a punishment. They are merely a register of conduct, by which the character of cadets and their relative fitness for the duties of military service are determined.

It is deemed advisable to relieve the first class from the duties of the non-commissioned officer and private, to place his time more at his own disposal, to accustom him gradually to the greater freedom and personal responsibility which he will attain on graduation; to give him a position somewhat intermediate between the cadet and the officer; but the details of this plan can only be worked out by those in charge of the Academy, who can test the system and vary the regulations so as to avoid the evils of too great freedom, and check any tendency to ill effects that the privileges of the first class might have on the discipline of the corps. The Commission think, likewise, that the library should at all times be open to the cadets of the first class, and that they should be as much as possible separated from the junior classes in their quarters. There is now, as will appear from the record, a deficiency in quarters

for the junior officers and cadets, and in making provision for this deficiency, quartering the cadets of the first class apart from the others, and in a separate building, should be kept in view. New buildings will be required if the corps of cadets is increased. The comfort and health of cadets are essential to the efficient prosecution of their studies. Comfortable rooms, seasonable clothing, and good food ought to be secured, and in each of these there is now a deficiency.

The system of heating the barracks by furnaces is so defective, that during very cold weather some rooms are so cold as to prevent the cadet from studying, and to drive him either to bed or to seek refuge in another room, where he incommodes the occupants and interferes with their studies; while at the same time other rooms are heated to a degree equally inconsistent with comfort and health, and subjecting the occupants to headaches which incapacitate them for study. Whether the defect be in the construction of the building or of the furnaces, the Commission do not undertake to determine. They think it of the utmost importance to remedy the grievance, and they recommend that the furnaces be dispensed with, and that the cadet's room be heated by bituminous coal or wood burned in open grates.

The time allowed for sleep, during a great part of the year, does not exceed seven hours. During a portion of the year only, are eight hours allowed. The Commission are of the opinion that seven hours of sleep is too little for young men of the age of the cadets, who are subjected to the severe mental and physical exertion required of them, and they recommend that the regulations be so changed as to provide that not less than eight hours shall at any time intervene between tattoo and reveille.

The regulations now define rigidly the times of transition from summer to winter and from winter to summer clothing, and take no notice of variations of weather, which, if not provided against by corresponding changes in clothing, may seriously affect the comfort and the health of the cadets. The plainest dictates of prudence require a change in this respect, and the superintendent should be directed to vary the clothing of the cadets as a prudent person would vary that of his son, or as a prudent officer would those of his command.

The Commission inspected the mess-hall or commons of the cadets repeatedly at dinner-time, and without giving notice of their coming. They regret to say that they found it in a state far from satisfactory, and the complaint of the cadets, loud and concurrent, were quite justified by the food upon the tables. It was neither nutritious nor wholesome, neither sufficient nor nicely dressed. The Commission will not assume the invidious task of determining where the responsibility lies. The evils probably flow from a combination of causes; a spirit of economy pressed too far; a system of accountability, requiring the concurrence of too many persons before a remedy can be applied; and the attaching of too little importance to the matter. Possibly all of these concurred in producing the present results. About nine dollars a month only has been allowed for the messing of the cadets. This includes expenses of table furniture, servants, cooks, and purveyor. The sum is believed to be too small, yet the food was not such as even that amount ought to have provided. The Commission think that twelve dollars a month is not an unreasonable allowance for these expenses, and the pay of the cadets will justify the increase which is recommended. The chief evil was in the absence of some responsible person, charged with the duty of inspection, and having power to remedy the evils adverted to. The Commission propose to counteract them by making the Command-

ant of Cadets inspector of commons, requiring his personal attendance to the duty, vesting him with the power to remedy every deficiency, and placing under his supervision and control everything relating to providing for the table of the cadets, as well as the amount which the purveyor may expend, and the manner in which he shall expend it.

These matters are considered so important to the interests of the institution that they have been incorporated into an organic act for the reorganization of the Academy.

CONDITION OF INSTRUCTION.

The Commission were much impressed by the evidence of a want of thoroughness in the attainments in the lower sections of the classes of many who are permitted to graduate. It is not to be expected that all intellects can acquire in the same time the same amount of knowledge; *False -* nor is it wise to confine the instruction of brilliant minds to the limits which more moderate ability may laboriously attain. But if the youth of genius be versed more profoundly than his less gifted fellow in mathematics or physics, still each should know well what he is required to know in order to graduate; and no diploma should be awarded to any one not competent to discharge all the duties which may be required of him in any branch of the military service. Deficiency seems to exist chiefly in those departments of physical science which are taught in the language of the higher mathematics. The cause and the remedy are equally obscure. Whether it be that the cadet does not thoroughly master his pure mathematics, or that he forgets it after he has learned it, or the employment of methods of investigation in applied mathematics, which, while beautifully scientific, may be too abstruse for a course of instruction, the Commission will not venture to determine. They have endeavored to provide a remedy which shall exclude some of the causes suggested; and they trust, should that remedy fail, that the commission of supervision will, with more time and science at their command, ascertain the real cause and apply a corrective.

The evil has been ascribed to various causes, some of which may not have been without their influence, and remedies are proposed in view of those causes.

It is possible that the low standard of admission, and the untrained state of the cadet's mind when entering upon his studies, are serious obstacles to his acquiring the course. It has been proposed to raise the standard of admission, and to require, in addition to reading, writing, and arithmetic, a knowledge of geography, grammar, and algebra. But this would greatly limit the field of selection for cadets, and exclude from the Academy many sons of worthy but poor parents, and some brilliant minds would be lost to the public service.

The standard has remained unchanged ever since the organization of the Academy; the results show it to be consistent with the highest proficiency; and the Commission are unwilling to do anything to alter the eminently popular, republican, and equal conditions of admission which open the military career to the ambition and genius of all the sons of the Republic.

It has been further suggested that candidates should be selected for the Academy by a competitive examination, leaving the standard unchanged, but awarding the cadetship to the most proficient, according to that standard. But the Commission think this competition must always result in the success of the *best instructed*, wholly irrespective of the capacity of the competing candidates. The youth whose parents

could give him the advantages of early and thorough training, however moderate his abilities, must surpass the brightest youth without such opportunities. The plan secures the services of dull mediocrity, well instructed, and excludes genius, without opportunities of development. It gives the very advantage to the rich over the poor, which the genius of our institutions prohibits.

The Commission accepted the suggestion of a distinguished professor of the Academy as the one most likely within possible conditions to remedy the evils of imperfect instruction. The principal difficulty is supposed to be in the untrained state of the pupil's mind on entering; the remedy is to make the first year a year of training, and to test his fitness to remain within that year, and by its results. A complete knowledge of the English language, in which most cadets are very deficient on entering, a thorough acquirement of mathematics in its lower departments, and of geography during that year will, it is hoped, bring the mind to that state of training, and furnish it with that power of appreciating the meaning of words, and of expressing itself clearly, which will facilitate the acquisition of the later and more abstruse parts of the course.

It is possible that the evil had been increased by a gradual yielding to a kindly feeling on the part of the examiners, and a pardonable reluctance to exclude from the Academy any one not flagrantly derelict, and the frequency with which, lately, cadets found deficient, and recommended for discharge have been reinstated in the Academy, and even in their classes, must tend to countenance and encourage a laxity in the examination, and in the application of the final penalty, greatly prejudicial to the institution. The Commission have no hesitation in declaring that every cadet who cannot stand a thorough examination should be discharged, and they have endeavored to place the academic board on a more independent footing, so as to throw on them the responsibility for the attainments of every graduate.

The Commission have further endeavored to remedy the deficiency in practical knowledge, and the power of applying for professional purposes, the scientific knowledge theoretically imparted. This is essential to a thorough apprehension of the course by the student, and to his retention of his knowledge. They have, therefore, so arranged a programme, appended to this report, and marked (I) as to secure to the first class the whole of the encampment, and the months of September and October for instruction in the field in practical engineering, geodesy, topography, and reconnaissance, and they have proposed an additional department of instruction to effectuate this plan. It is inconsistent with its success for any furlough to be granted to the first class during the encampment, and the months of September and October.

The Professor of Natural Philosophy complained of a deficiency in his apparatus, and similar complaints were made by the Professor of Chemistry and Geology of deficiencies, not merely in his apparatus, but also in the cabinet of minerals, without which thorough instruction in geology and mineralogy, and in certain departments of engineering is impossible. We call attention to their detailed recommendations, and ask that their requests be granted.

It seems advisable that an additional building be erected for the accommodation of the professors of those departments in which may be united all the philosophical apparatus, and the laboratory and cabinet of minerals of the Academy, so that they may be more convenient of access; and their great value renders it important that the building should be fire-proof.

There is a great defect in the library in the department of literary magazines and reviews. Neither the Quarterly, nor Blackwood's, nor the Westminster, nor the Revue des Deux Mondes is to be found in the library, which, however, abounds in scientific periodicals. The youthful student needs relaxation after severe study, yet he is now wholly debarred the use of books from the library, in his own room, except on Sunday, and has access to them in the library only on Saturday during the limited period of recreation. There is also a deficiency in duplicate copies in important and useful historical works, greatly limiting the number who can use them.

It is recommended that the regulations be varied by the Superintendent, who is charged with the internal police of the Academy, so as to allow the cadets the use, under reasonable restrictions as to number and time, of books from the library in their rooms.

In connection with the subject of admission to the Academy, the Commission recommend that the following be substituted for paragraph 15, Regulations for the United States Military Academy:

"Each candidate, before he is admitted into the Military Academy as a cadet, must be able to read the English language in a clear and distinct tone of voice, with particular attention to pronunciation, emphasis and pauses; to write in a fair and legible hand, in proper form and without mistakes in spelling, such sentences of prose or poetry as may be read to him by one of the examiners; to give clearly the rules for the various operations of arithmetic, above specified, particularly for vulgar and decimal fractions and proportion, with the reasons therefor, and to solve and explain fully, and without hesitation, any examples which may be proposed to illustrate those rules."

TERM OF THE ACADEMIC COURSE.

The Commission came to the examination of the question of the term of the academic course with a predisposition on the part of a majority of its members in favor of a reduction of the time from five to four years; but, after a careful investigation, unanimously reached the conclusion that no reduction of the time could be made without injury to the best interests of the military service. For the reasons set forth in connection with the subject of the qualifications to be required for admission to the Academy, the proposition to raise the standard of acquirement preparatory to entrance into the Academy was rejected, so that it was reduced to a determination of the time required to learn the prescribed course by one who began with the little knowledge which candidates for admission have heretofore been required to possess. It was found, thus regarded, that severe labor would alone enable ordinary minds to master the course in the period of five years. Either dullness or indolence must entail deficiency. A close inquiry led to the conclusion that little now taught could be properly omitted, and that the time which could be gained by such omission was not sufficient to give that thorough and practical instruction which was believed to be desirable in other branches.

Each of the professors of the different departments showed that additions to his course were needed, for which the time allowed had not sufficed.

It then but remained to decide whether the amount of acquirement now demanded of the graduate should be diminished, with a view to a reduction of the time to be spent at the Academy.

The policy of our government has ever been to rely for national de-

fense on the militia of the States, and hence it has resulted that officers of the Army have not been merely trained for the duties of a special arm, but endowed with elementary and practical knowledge of the science of war and service of the three arms, so as to be fit for all the duties of the staff and for the command of troops in all the combinations and contingencies which belong to the vicissitudes of war. To effect this, if experience had been wanting, it would have required but little argument to show that an elementary education in all which pertains to the profession of arms was indispensable. The testimony, however, of the wars in which the United States have been engaged is so conclusive of the question, that the public judgment may be regarded as finally rendered in favor of a school for the elementary instruction of cadets; that is, the lowest grade of the officers of the Army. The small size of our Army and the urgent demands of frontier service permit only such schools of practice as may be instituted in garrisons during intervals when the troops are not required in the field; therefore practical instruction at the Academy has an importance which otherwise it would not possess. The Commission were gratified to find the practical military instruction extensive and a standard of proficiency reached, in all which relates to the use of the three arms, which would enable the graduates to perform the duties of either, if the necessities of service should require the temporary transfer of an officer from one arm to another.

But little practical instruction in the duties of the engineer and the staff officer is given. The Commission have made some time available for practical instruction in these important duties. The expediency of teaching the French and Spanish languages at the Academy will not be questioned, and the time allotted to them is already compressed to the smallest limits to be useful. The former continues to be the language most essential to the student of the science of war, and the reasons which from the early organization of the Academy caused it to be a part of the course taught to the cadets remain in full force. The latter, from our geographical and political relations to the Hispano-American States, has acquired such importance that it must now be regarded as necessary to the officers of the Army under many circumstances and positions supposable and even probable in the contingencies of service.

No material reduction of subject or time can be made in the mathematical and scientific studies and their application to the art of war, if we are to keep pace with the advance of science; and the Commission cannot recommend a reduction of the standard of military education at the moment when many of the great States of Europe, profiting by experience, are endeavoring to raise it.

REORGANIZATION.

The views of the Commission relative to the Military Academy are embodied in the following bill for its reorganization, which they herewith submit:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the United States Military Academy at West Point shall consist of—

One Superintendent;

One Commandant of Cadets and Instructor of Tactics, with two Assistant Instructors of Cavalry Tactics; two Assistant Instructors of Artillery Tactics; two Assistant Instructors of Infantry Tactics;

One Professor of Military and Civil Engineering and Science of War, with two Assistant Professors ;

One Professor of Natural and Experimental Philosophy, with two Assistant Professors ;

One Professor of Chemistry, Mineralogy, and Geology, with one Assistant Professor ;

One Professor of Mathematics, with five Assistant Professors ;

One Chaplain and Professor of Ethics, English letters, Geography, History, and Law, with five Assistant Professors ;

One Professor of Drawing, with two Assistant Professors ;

One Professor of French, with two Assistant Professors ;

One Professor of Spanish, with two Assistant Professors ;

One Instructor of Practical Geodesy, Astronomy, Topography, and Reconnoissance, with one Assistant Instructor ;

One Instructor of Ordnance and Gunnery ;

One Instructor of Practical Engineering ;

One Instructor in the use of Small-arms, Gymnastics, &c., with one Assistant ;

One Surgeon ;

One Assistant Surgeon ;

One Adjutant ;

One Quartermaster and Commissary ;

One Treasurer ;

One Inspector of the Academy ;

The Corps of Cadets ; and

The Commission of Supervision, to be styled the United States Military Academy Commission.

The Superintendent shall be an officer of the Army, a graduate of the United States Military Academy, and distinguished for his scientific attainments. He shall have the local rank, pay, and allowances of a colonel of engineers, and be appointed by the President, by and with the advice and consent of the Senate.

The Commandant of Cadets and Instructor of Tactics shall be an officer of the Army, a graduate of the United States Military Academy, and distinguished by service in the field with troops ; and shall have the local rank, pay, and allowances of a lieutenant colonel of engineers, and be appointed by the President, by and with the advice and consent of the Senate.

The Professors shall be appointed by the President, by and with the advice and consent of the Senate ; they shall hold their offices subject to removal by the President of the United States upon the recommendation of the United States Military Academy Commission ; they shall have the local rank and allowance of fuel and quarters of majors of the Army, but shall exercise no command except in their departments and in the Academic Board ; they shall receive an annual salary of \$2,200, with service rations ; and any professor who shall have served in that capacity for twenty-five years may retire from the Academy, or may be retired by the President at his discretion, and in either case he shall receive thereafter the pay to which he was entitled at the date of his retirement ; they shall be subject to the rules and articles of war, and to the regulations of the United States Military Academy.

The Instructor of Practical Geodesy, Astronomy, Topography, and Reconnoissance, the Instructor of Practical Engineering, and the Instructor of Ordnance and Gunnery, shall be captains or lieutenants of the Army, and shall receive the pay and allowances of captains of engineers, and, in addition thereto, twenty-five dollars a month, and no other pay or allowance whatsoever.

The Assistant Instructor of Cavalry, Artillery, and Infantry Tactics, shall be lieutenants of the mounted corps, artillery, and infantry arms, respectively; one of the Assistant Professors of Ethics, English Letters, Geography, History, and Law, shall be appointed from civil life by the President, the other Assistant Professors and Assistant Instructors, the Instructor in the use of Small-arms, Gymnastics, &c., the Adjutant, the Quartermaster and Commissary, and the Treasurer, shall be lieutenants of the Army, and all shall have the pay and allowances of captains and engineers.

The Assistant Professors and the Assistant Instructors shall be assigned to sections at the discretion of the Professor or Instructor at the head of their respective departments; and when any Assistant Professor or Assistant Instructor shall be relieved from duty at the Academy, the Professor or Instructor shall transmit, through the Superintendent, his recommendations for a successor, and the appointment shall be made in conformity to such recommendation, so far as the interests of the public service will allow.

The Surgeon and Assistant Surgeon shall be taken from the medical staff of the Army.

The assistant to the instructor in the use of small-arms shall be appointed by the President, and shall receive an annual compensation of twelve hundred dollars.

The commander of the United States Corps of Engineers shall be the inspector of the Academy. The orders of the Secretary of War relative to the Academy shall be communicated through him, and to him the Superintendent shall make all reports, returns, estimates, and communications concerning the institution. He shall, at least twice in each year, make a rigid inspection of the Military Academy and post of West Point.

The corps of cadets shall consist of one cadet from each Congressional district, one from each Territory, one from the District of Columbia, who shall be actual residents of the district or Territory whence appointed; and in addition thereto there shall, each year, be ten cadets, and no more, appointed at large. The cadets shall be subject to the rules and articles of war, and to the established regulations of the Academy. They shall be arranged by the Superintendent into companies of officers, non-commissioned officers, and privates, for the purpose of military instruction, which shall be given throughout their whole term of service; and the said corps shall be trained and taught in all the duties of a private, non-commissioned officer, and officer. The performance by the cadet of the duties of non-commissioned officer and private shall cease when he enters the first class (fifth year); and instruction in the performance of all the duties of the commissioned officer, so far as practicable, shall be given to all members of the first class. The said corps shall be encamped not less than two nor more than three months in each year, and be taught all of the duties incident to a camp. Each cadet shall be, when admitted to the Academy, not under the age of sixteen, nor over the age of twenty years; shall be well versed in reading, writing, and arithmetic, and physically competent, in the opinion of a board of three medical officers, to serve his country in the position of an officer of the Army.

Every cadet who shall, after going through all of the classes, receive a diploma from the Academic Board, shall be considered as a preferred candidate for a commission in the Army; and if there be no vacancy in the corps or arm to which he may be assigned by the President, he may be attached to it for promotion, in the order of his class standing

at graduation, by brevet of the lowest grade as a supernumerary officer, with the pay and emoluments of that grade until a vacancy shall occur therein; but there shall not be more than one supernumerary officer to any one company at the same time, and every cadet who shall be assigned either to the Corps of Engineers, the Corps of Topographical Engineers, or to the Ordnance, shall serve at least one year with a company of either cavalry, artillery, or infantry before joining his corps.

The cadet, when admitted to the Academy, shall engage to serve the United States for eight years, unless sooner discharged.

The United States Military Academy Commission shall consist of one United States Senator, one member of the United States House of Representatives, the Inspector of the Academy, two officers of the Army, one distinguished for scientific and the other for practical military knowledge, and two citizens of the United States, one of whom shall be eminent in mathematical and the other in physical science. The Senator shall be appointed by the President of the Senate, the member by the Speaker of the House of Representatives. The Inspector shall be *ex-officio*, and the officers of the Army and the two citizens shall be selected by the President of the United States.

The Senator and Representative shall be appointed immediately after the passage of this act, and thereafter at the beginning of the first session of each Congress, and shall retain their positions until the meeting of the next Congress. The two officers of the Army shall serve for a term of six years, except that one of the two first designated shall be relieved at the expiration of three years. The two citizens shall serve for a term of five years, except that one of the two first appointed shall serve for a term of seven years.

Each member of the Commission shall be allowed ten cents a mile, in lieu of his traveling expenses, to and fro, between his residence or station and the Military Academy, and to an annual compensation of five hundred dollars, which, in the cases of the members of Congress and officers of the Army, shall be in addition to their ordinary compensation.

It shall be the duty of the Commission to attend the annual examinations at the Academy in June; to make a thorough inspection of the Academy; to examine into the system of discipline, the police, the administrative and fiscal affairs of the institution; into the character and thoroughness of the instruction; the competency, efficiency, and conduct of the Superintendent, commandant, professors, and instructors, and all other officers of the Academy, and report their opinion thereupon to the President, in time to be laid before Congress at the next session; and in the event of the commissioners finding that any officer, professor, or instructor is incompetent to the efficient discharge of all his duties, or is negligent therein, or conducts himself in a manner prejudicial to the morals or discipline of the Academy, the Commission shall report the name of such officer, professor, or instructor to the President, with a recommendation for his removal from the Academy.

It shall be the further duty of the Commission to revise, from time to time, the programme of studies and methods of instruction, and the text books, maps, models, apparatus, &c., used in all departments of the Academy; to see that the instruction in the cavalry, artillery, and infantry arms is strictly according to the tactics adopted for the Army of the United States, and to report such changes as they may deem necessary, which, when approved by the Secretary of War, shall be conformed to by the professors and instructors at the Academy; and no

change, in either the programme of studies, methods of instruction, or text books, maps, models, apparatus, &c., shall be made by any person excepting upon the recommendation of the Commission and the order of the Secretary of War; and, upon their recommendation, the Secretary of War may, at his discretion, transfer any assistant professorship from one department to another, according to the wants of the institution.

The officers of the United States Military Academy, as such, shall take rank in the following order, viz: first, the Superintendent; second, the commandant of the corps of cadets; third, the professors, according to the dates of their commissions; fourth, all other officers on duty at the Academy in the order of their rank in the Army.

The Superintendent of the Academy, or in his absence, the officer next in rank on duty at the Academy, shall have the immediate government of the institution, and be the commanding officer of the post; and all the officers, professors, instructors, and cadets, shall be under his command. He will see that all laws, regulations, and orders relating to the Academy are faithfully executed, and his authority will extend to all parts of the service and instruction; he will see that the instruction conforms, in all respects, to the programme and methods prescribed by law or regulation; he will preside at the sessions of the Academic Board; he shall report to the United States Military Academy Commission, at their annual session, any defects in the programme, text books, or methods of instruction, and any incapacity, negligence, or misconduct, of the officers, professors, or instructors.

The commandant of the cadets shall be charged with the command of the corps of cadets, and with their instruction in all the rules of military police, discipline, and administration; shall be instructor in the tactics of the three arms, and, in the absence of the Superintendent, shall exercise his functions.

The commandant of the corps, or, in his absence, the officer highest in rank in the tactical department, shall be the inspector of the commons, and shall personally inspect the same at dinner time daily, and at least once a week at other meals; shall see that the cadets have sufficient and wholesome food and proper attendance, and shall remedy all deficiencies, either in the quantity or quality of the fare; and any provisions condemned by the inspector of commons shall be charged to the purveyor.

The commandant of cadets shall supervise the purveyor in the discharge of his duties, and, subject to the regulations prescribed by the President, direct the amount to be expended by the purveyor, in providing for the commons.

A board, composed of the commandant, the treasurer, and the quartermaster and commissary of the Academy, shall audit the accounts of expenditure for subsistence of cadets, and assess the monthly rates to be paid by each cadet.

The quartermaster and commissary of the Academy shall disburse and account for all moneys and property appropriated for and belonging to the Military Academy; and the same person shall be quartermaster and commissary of the post of West Point.

The President of the United States may make regulations for the government of the Academy, not inconsistent with the Constitution and laws of the United States, and the Superintendent may prescribe regulations for the internal police and discipline of the Academy, in conformity to the regulations of the President, and orders of the Secretary of War.

There shall be an Academic Board, to consist of the Superintendent, the commandant of cadets, and the professors; and when any class or section shall be under examination, the immediate instructor of such class or section shall be a member of the board.

The duties of the Academic Board shall be confined to the examination of the cadets, deciding upon their merits, granting diplomas, and reporting upon the special qualifications of graduates; recommending for purchase, books, maps, models, apparatus, &c., required for instruction of cadets; and each professor will report, through the Superintendent, to the United States Military Academy Commission, at their annual session, any modifications in the programme of studies, or in the text books, or in the methods of instruction that may seem to him desirable; but no changes will be made therein except upon the recommendation of the Commission and the approval of the Secretary of War.

An annual examination of the classes, preparatory to their advancement, shall commence on the first day of June (except when that day comes on Sunday or Monday, when it shall be on the first Tuesday), at which time the cadets shall be examined by the Academic Board, or its committees, in all the branches of study and instruction through which they have passed in the previous year, in presence of the United States Military Academy Commission, and such other literary and scientific gentlemen, as may be invited to attend.

A semi-annual examination shall be held by the Academic Board, commencing on the second day of January; on the third, when the second falls on Sunday.

At the annual examination in June, the Academic Board shall examine, arrange in order of merit, and determine the proficiency of the cadets of the first class, in the studies prescribed for that class.

For the purpose of examining the other classes in the studies respectively pursued by them, the Superintendent shall divide the Academic Board into two or more committees, as nearly equal in number as may be; each committee to examine, arrange in order of merit, and determine the proficiency of the cadets in such branches of study as the law or regulations shall direct.

At the semi-annual examination in January, the Academic Board shall examine, arrange in order of merit, and determine the proficiency of the cadets of the fifth class, in the studies prescribed for that class, and the examinations, arrangements, and determinations of proficiency of the other classes shall be made by the committees, as provided for the June examination.

The Superintendent may, at his discretion, be a member of any committee, and preside therein; in other cases, the senior member of the Academic Board present shall preside.

Each member of the examining committee shall keep careful notes of the examination, and be prepared to give full and ample information to the entire board, when necessary, of the performance of every one examined; and, to increase the accuracy of classification, and the ascertainment of cases of deficiency, every instructor, charged with the instruction of a section, shall carefully prepare and submit to the examining committee, just before the examination, a list of each section, arranged in the order of merit, as suggested by the marks, during the term, and the impression which the daily recitations may have left upon his mind, noting every case of doubtful proficiency by a note of interrogation opposite to the name of the doubtful individual. The committee shall report all cases of doubtful proficiency to the entire board, with

all the facts of each particular case, to the end that all doubt may be settled by a vote of the whole board, taken by ayes and noes.

The assistant professor or instructor of the first section in the branch of study under examination, shall be a member of the Academic Board or of the committee, for all of the purposes above mentioned; and the instructor of the section under examination, shall be a member of the Academic Board, or of the committee, as the case may be, for the purpose of examining and arranging said section in order of merit.

Notes of the proceedings and the rolls determined by each committee shall be kept by an officer detailed for that purpose, and shall be delivered by him to the secretary of the Academic Board for preservation among the records of the board.

The cases of deficiency reported by the committees shall be re-examined by the whole board for final determination in each case.

At each examination the Academic Board shall report to the Secretary of War all cadets who are deficient in conduct or studies, and every cadet found deficient shall be discharged from the Academy, and shall not be returned thereto unless the Academic Board report that his deficiency was occasioned by sickness, or other unavoidable interruption to his course of studies, and therefore recommend him to be suspended or turned back; and the Superintendent may at any time bring any cadet before the Academic Board to be examined and reported in like manner if found hopelessly deficient in studies or in conduct.

The Superintendent shall, in the month of November of each year, report to the War Department, for publication in the Army Register the names of the most distinguished cadets, not exceeding five in each class, as determined at the examination in the preceding June, and shall specify the studies in which they particularly excelled.

Each cadet of the first class who, at the annual examination, is found proficient in the prescribed academic course shall receive a diploma signed by the Superintendent and members of the Academic Board, certifying his proficiency in all of the prescribed course, and recommending him for promotion in the Army of the United States.

The Academic Board shall lay before the inspector the names of the graduates, and a statement of the corps or arm of service for which each graduate is, by capacity and attainment, best fitted; which statement the inspector shall lay before the Secretary of War, with his observations thereon; and the graduates shall have the privilege, according to the order of their general merit, and subject to the discretion of the President of the United States, of selecting the corps or arm of service into which they may be promoted.

If the Academic Board doubt the physical ability of a graduate for military service, his case shall be referred to a board composed of the Superintendent, the Commandant of Cadets, and three officers of the Medical Staff, whose finding shall be laid before the President of the United States.

In the promotion of cadets to vacancies occurring in the corps or arm to which they may be attached, the succession of each shall correspond with his standing on the roll of general merit as established by the Academic Board.

No cadet resigning his warrant, or otherwise separated from the Academy before the completion of his studies, shall receive an appointment in the Army until one year after the promotion of the graduates of the class to which he belonged.

No cadet having been dismissed under sentence of a general court-martial shall afterwards be restored to the United States Military Academy.

The cadets shall be divided, as at present, into five classes, and the course of studies shall be arranged so that they shall continue during and be completed in five years. The year shall be divided into two academic terms, with an interval for the purpose of encampment.

The fifth class shall be instructed in mathematics, in the English language, and geography, in the French language, and in the use of small arms, and gymnastics.

The fourth class shall be instructed in mathematics, in the French language, in drawing, and in the use of small arms, and gymnastics.

The third class shall be instructed in mechanics, physics, and astronomy, in chemistry, in drawing, in the English language, and in riding.

The second class shall be instructed in civil and military engineering; in mineralogy, and geology, and physical geography; in logic, rhetoric, and ethics; in tactics of cavalry, artillery, and infantry; army administration, and the veterinary art; in ordnance and gunnery; and in riding.

The first class shall be instructed in practical engineering; in practical geodesy, astronomy, topography, and reconnaissance; in constitutional, international, and military law and history; in the science of war; in the Spanish language; and in riding. During the encampment, and the months of September and October, when not on duty as officers, they shall receive practical field instruction in those branches; and for that purpose may be allowed, from time to time, under the instructor, or one of the assistants, to make excursions into the neighboring country.

All other laws relating to the Military Academy are hereby repealed.

The Commission recommend for adoption the programme of instruction annexed to this report, and marked I. It is substantially the same, though modified in some particulars, as that prepared by a board of officers, organized in January last by direction of the Secretary of War.

Annexed to this report, and marked II, is a brief history of the Academy, showing the changes that have taken place in its organization and course of instruction. It is followed by an account of military education in Europe, and a comparison of their systems and courses of instruction with our own.

The proceedings of the Commission, marked III, and the accompanying papers, are submitted herewith.

JEFFERSON DAVIS,

United States Senator and President of Commission.

SOLOMON FOOT,

United States Senator.

H. WINTER DAVIS,

Member of Congress.

JOHN COCHRANE,

Member of Congress.

A. A. HUMPHREYS,

Captain Corps Top. Eng's, U. S. A,

WASHINGTON, December 13, 1860.

Papers accompanying the report.

- I. A Programme of a Course of Instruction.
- II. An Historical Sketch of the United States Military Academy, with an account of the Condition of Military Education in Europe.
- III. The Record of the Proceedings of the Commission, and three parcels of letters, marked from A to Z (J not included); A to Z (J not included); and A to N (J not included).

I.

Programme of the course of studies at the Military Academy, as adopted by the board to revise the programme, &c., in session from January 12 to ——— and modified by the United States Military Academy Commission.

Subjects.	Hours of the day.	Periods of the year.	Number of lessons.	Number of pages.	Present programme.		Remarks.
					Number of lessons.	Number of pages.	
Mathematics.	Algebra	First term.....	85.....	400, 1st sec..	85.....	{ 400, 1st sec. 265, last..	These subjects should be taught as at present, with the modification that the standard of proficiency should be higher for the lower part of the class. Each student should have as many practical examples as time will admit.
	Geometry.....	Second term....	40, 1st sec..	254.....	{ 40, first .. 65, last..	{ 254..... 253.....	
	Trigonometry	do.....	21, 1st sec.	94.....	{ 21, first .. 27, last..	{ 94.....	
	Mensuration.....	do.....	2.....	21, 1st sec.	2.....	{ 21, 1st sec. 15, last..	
	Descriptive Geometry.....	do.....	36, 1st sec.	106.....	{ 36, first sec.. 9, last..	{ 106..... 56.....	
English.	{ English Language..	First term, daily	55.....	168.....	The professor of English and Geography to select or prepare his text books. Composition in the section room by paraphrase of readings by the instructor, with exercises in the structure of sentences and meaning of words.
	{ General Geography..	Second term....	.....	.....	.....	.....
French	11 to 1 and 2 to 4 on Mondays, Wednesdays, and Fridays.....	do.....	The present programme adopted in French, as much being taught in this year as the time will allow.
Use of Small Arms and Gymnastics.....	11 to 1 and 2 to 4.....	First and second terms.....	According to the present arrangement.
Military Exercises.....	After 4 p. m.....	Daily from Sept. 1 to Nov. 1, and from March 15 until May 31.	.....	.....	.....	.....

Class.

FIFTH CLASS.

FOURTH CLASS.

Mathematics.		First term.	11, 1st sec.	174	{ 11, 1st sec. 25, last.	174
Descriptive Geometry.	8 to 11, daily	.....	.....	.....	{ 25, last.	117
	.....do	.....do	31, 1st sec.	130	{ 31, 1st sec.	130
Shades and Shadows.	.....do	.....do	.....	.....	{ 28, last.	74
	.....do	.....do	56, 1st sec.	207	{ 56, 1st sec.	207
Analytical Geometry.	.....do	.....do	.....	.....	{ 48, last.	189
	.....do	.....do	.....	.....	{ 48, last.	189
Calculus.	.....do	.....do	.....	.....	{ 58, last.	290, last.
	.....do	.....do	.....	.....	{ 58, last.	290, last.
Surveying.	.....do	.....do	.....	.....	{ 193, 2d sec.	193, last.
	.....do	.....do	.....	.....	{ 193, 2d sec.	193, last.
French.	11 to 1, daily	.....	.....	.....	{ 17, last.	89
	.....do	.....do	.....	.....	{ 17, last.	89
Drawing.	2 to 4, every other day	.....	.....	.....	{ 185, last.	185
	.....do	.....do	.....	.....	{ 185, last.	185
Use of Small Arms and Gymnastics.	4 to 5, every other day	.....	.....	.....	{ 198, last.	198
	.....do	.....do	.....	.....	{ 198, last.	198
Military Exercises.	After 4 p. m.	.....	.....	.....	{ 198, last.	198
	.....do	.....do	.....	.....	{ 198, last.	198

The subject should be taught as at present, with the modification that the standard of proficiency should be higher for the lower part of the class.

Present programme in French adopted, as much being taught in fifth class as time will allow: the remainder in this class.

The first term being devoted to elementary principles and sketching from models, including the human figure.

The second term devoted to landscape drawing with pencil, brush, and pen, from models, and from nature.

Natural and Experimental Philosophy—Mechanics	8 to 11, daily	.....	.....	.....	.....	.....
	.....do	.....do	.....	.....	.....	.....
Acoustics and Optics, and Spherical Astronomy.	8 to 11, daily	.....	.....	.....	.....	.....
	.....do	.....do	.....	.....	.....	.....
Chemistry	2 to 4 every other day.	.....	.....	.....	.....	.....
	.....do	.....do	.....	.....	.....	.....
Drawing	11 to 1, Saturdays	.....	.....	.....	.....	.....
	.....do	.....do	.....	.....	.....	.....
Composition, (English).	11 to 1, every other day	.....	.....	.....	.....	.....
	.....do	.....do	.....	.....	.....	.....
Riding	After 1 p. m.	.....	.....	.....	.....	.....
	.....do	.....do	.....	.....	.....	.....
Military Exercises.	From Sept. 1 to Nov. 1, and from March 15 to May 31.	.....	.....	.....	.....	.....
	.....do	.....do	.....	.....	.....	.....

In addition to the teaching

from text books, there

shall be conversational

and formal lectures and

practical instruction.

In addition to the teaching

from text books, there

shall be conversational

and formal lectures and

practical instruction.

Present programme adopted, with modifica-

tions suggested by the professor.

Twelve lessons in Architectural Drawing from

models and eighty-four in Topographical

Drawing with pen and brush, including

sketching in the field. *Alternates with Chem-*

istry

every Saturday, 11 to 1, devoted to Compu-

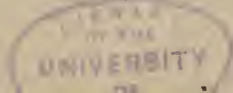
sition, in the section room, from readings by the

instructor.

Instruction same as now, and to attend on the

same day instruction is given in Drawing.

THIRD CLASS.



I—Continued.

Subjects.	Hours of the day.	Periods of the year.	Number of lessons.	Number of pages.	Present programme.		Remarks.
					Number of lessons.	Number of pages.	
Engineering. { Civil Engineering Military Engineering }	8 to 11, daily.	First term.....	72.....	.....	72.....	.....	{ The standard of proficiency should be higher for the lower part of the class. Present programme adopted, omitting, in Civil Engineering, articles 5, 6, 7, 8, 9, 42, 44, 46, and 47. Stereotomy (except for the first section), Nos. 26 and 27. In Military Engineering (except for first section), Nos. 5, 6, 7, 8, 9, and 10.
	.....do.....	Second term.....	57.....	.....	57.....	.....
Mineralogy, Geology, and Physical Geography.	11 to 1, every other day.	First term, and from May 10 to 31.	.....	.....	.....	.....	Programme with modifications suggested by the professor adopted in Mineralogy and Geology. Physical Geography to be added.
Tactics. { Tactics of Infantry, } Artillery, and Cavalry. { System of Military } Administration and Army Accounts. { Veterinary Art.... }	2 to 4, every other day.	Sept. 1 to May 10.	84 days.....	.....	62.....	630 528 128	
Rhetoric, Logic, and Ethics.	.....do.....	First and second terms.	.....	.....	.....	.....	The professor to select or prepare his text books on these subjects.
Ordnance and Gunnery..	11 to 1, every other day.	Second term....	58 days.....	.....	58 days.....	.....
Riding.....	After 4 p. m. every other day.	First and second terms.	.....	.....	105.....	.....	Riding to cease when the horses are required for battery maneuvers.
Military Exercises	After 4 p. m.	From Sept. 1 to Nov. 1, and from March 13 to May 31.	.....	.....	.....	.....

Class.

SECOND CLASS.

Law, &c. { Constitutional and international law, } { Military law..... } { History..... }	8 to 11 a. m. daily, from Nov. 1 to Jan. 1, and every other day from January to June.	From Nov. 1 to May 31.	108 days.		The professor to select or prepare his text-books.
Spanish.....	2 to 4, daily.....	First and second terms.			Except when the sections are absent on surveys, &c., or engaged in receiving practical instruction in the field in Engineering, Geodesy, &c.
Science of war.....	8 to 11, every other day.	Second term....	60 days.		Memoirs upon campaigns to be prepared by the cadets; and special attention to the style of composition to be given.
Practical Geodesy, Astronomy, Topography, and Reconnaissance, and Engineering.	All the day.....	September and October.			Practical instruction to be given in the field during the encampment, as well as during the months of September and October.
Cavalry Exercises in the riding hall and on the plain.	12 to 1, every other day.	From Nov. 1 to May 31.			After 4 p. m., except when on artillery drill, during that portion of the year when there are field exercises; during the remainder of the academic year from 12 to 1.
Military Exercises.....	After 4, daily, except when absent on surveys, &c.				

Practical instruction in this class shall be given as officers and instructors, by regular details for the infantry, cavalry, and artillery drill, such that every member of the class shall have the same opportunity of instruction.

II.

An historical sketch of the United States Military Academy, and an account of military education in Europe compared with that in the United States.

UNITED STATES MILITARY ACADEMY.

A brief historical sketch of the Military Academy, exhibiting its condition from time to time, whenever it has been the subject of legislation, will explain the object had in view in modifying its organization at various periods, and show that the Academy has expanded as the science of the country has advanced.

During the war of the Revolution, and for a long period subsequent, the country was dependent upon foreigners trained in the military schools and armies of Europe for that knowledge of the science and art of war necessary in the conduct of our military operations, whether offensive or defensive. It was remarked by General Washington, and the officers engaged in that war, that its difficulties would have been diminished and its duration shortened if that knowledge had been generally diffused through the Army. Some provision for the establishment of an institution by which a knowledge of the science and art of war could be imparted to the Army engaged the attention of the government at an early day. In the annual message of December, 1793, General Washington suggested the inquiry "whether a material feature in the improvement" of the system of military defense "ought not to be to afford an opportunity for the study of those branches of the art which can scarcely ever be attained by practice alone." The act of May 9, 1794, provided for a corps of artilleryists and engineers, to consist of four battalions, to each of which eight cadets were to be attached, and made it the duty of the Secretary of War to procure, at the public expense, the necessary books, instruments, and apparatus for the use and benefit of the corps.

Respecting this corps, the Secretary of War, Hon. Timothy Pickering, in a report upon the objects of the military establishment of the United States, February 3, 1796, states: "The corps of artilleryists and engineers appears to be an important establishment. To become skillful in either branch of their profession will require long attention, study, and practice; and because they can now acquire the knowledge of these arts advantageously only from the foreign officers who have been appointed with a special reference to this object, it will be important to keep the corps together for the present, as far as the necessary actual service will permit. Its principal station may then become a school for the purpose mentioned. To render this school more complete, provision is wanting for a geographical engineer and draughtsman. Such a one may now be retained for the establishment of a captain."

In his last message, December, 1796, General Washington declared that "the desirableness of this institution (a military academy) had constantly increased with every new view he had taken of the subject." Further, "the institution of a military academy is also recommended by cogent reasons; however pacific the general policy of a nation may be, it ought never to be without an adequate stock of military knowledge for emergencies. The first would impair the energy of its character, and both would hazard its safety, or expose it to greater evils, when war could not be avoided. Besides, that war might often not depend upon its own choice. In proportion, as the observance of pacific maxims

might exempt a nation from the necessity of practicing the rules of the military art ought to be its care in preserving and transmitting by proper establishments the knowledge of that art. Whatever argument may be drawn from particular examples, superficially viewed, a thorough examination of the subject will evince that the art of war is at once comprehensive and complicated, that it demands much previous study, and that the possession of it in its most improved and perfect state, is always of great moment to the security of a nation. This, therefore, ought to be a serious care of every government; and for this purpose an academy, where a regular course of instruction is given, is an obvious expedient which different nations have successfully employed."

Under the act of April 27, 1798, creating an additional regiment of artillerists and engineers, and providing it with all necessary books, instruments, and apparatus, and the supplementary act of July following, authorizing the employment in that regiment of four teachers of the sciences and arts, a number of officers and men were collected at West Point, and an attempt was made to open a military school. But the want of a preparatory induction into the arts and sciences, which form the basis of such an establishment, rendered it difficult for the officers to impart the necessary instruction, and, consequently, the school progressed slowly and with little success.

About the period when a war with France was considered probable, the Hon. James McHenry, Secretary of War, in a report upon the reorganization of the army, dated December 24, 1798, remarked:

"It is deeply to be lamented that a very precious period of leisure was not improved towards-forming among ourselves engineers and artillerists; and that, owing to this neglect, we are in danger of being overtaken by war, without a competent number of characters of these descriptions. To form them suddenly is impracticable; much previous study and experiment are essential. If possible to avoid it, a war ought not to find us unprovided." * * * * "What has resulted from the latter act (the act increasing the corps of artillerists and engineers) will make the subject of a particular report. In the mean while it is conceived to be advisable to endeavor to introduce from abroad at least one distinguished engineer and one distinguished officer of artillery. They may be sought for preferably in the Austrian and next in the Prussian armies."

A plan for reorganizing the Army, and establishing a military academy was submitted by the President to Congress, January 14, 1800. It was prepared by the Hon. James McHenry, Secretary of War. Respecting a military academy, it states: "This object has repeatedly engaged the favorable attention of the legislature, and some laws towards its consummation have been passed. These, however, being yet inadequate to afford the requisite instruction to officers and others 'in the principles of war, the exercises it requires, and the sciences upon which they are founded,' the adoption of a more perfect plan is conceived to be indispensable for these purposes. With this view the following plan is respectfully suggested, formed upon those of institutions of a similar nature, from which the nations who have founded them derived the most decided advantages.

"It is proposed that this Academy shall consist of four schools, one to be called 'the Fundamental School;' another, 'the School of Engineers and Artillerists;' another, 'the School of Cavalry and Infantry;' and a fourth, 'the School of the Navy;' and be provided with the following officers, professors, and teachers:

"A Director General to superintend the three first schools;

"A Director of the Fundamental School;

"A Director of the School of Engineers and Artillerists;

"A Director of the School of Cavalry and Infantry;

"A Director of the School of the Navy;

"Six Professors of Mathematics;

"Four Professors of Geography and Natural Philosophy;

"Two Professors of Chemistry, including Mineralogy;

"Three Architects;

"Four Designing and Drawing Masters;

"One Riding Master, and

"One Fencing Master.

"The fundamental school is designed to form engineers, including geographical engineers, miners, and officers for the artillery, cavalry, infantry, and Navy; consequently in this school is to be taught all the sciences necessary to a perfect knowledge of the different branches of the military art.

"The school of engineers and artillerists to teach those admitted therein and appointed or designed for engineers, the *application* of the theoretic knowledge which they had acquired in the fundamental school to the construction of all sorts of fortifications and military buildings appertaining thereto, to mines and countermines, sieges, attack and defense, to mineralogy, to the art of projecting and constructing bridges, roads, canals, and maritime ports, and all works relative thereto, to all geographic and topographic operations, the calculations relative to the same, to designing and drawing charts, &c.

"To those appointed or designed for the artillery service, the application of the theoretic knowledge acquired in the fundamental school, to the construction of gun carriages, pontoons, the fabrication of cannon and fire-arms, and to all the manœuvres of war which depend upon artillery.

"The school of cavalry and infantry to teach those admitted therein, and appointed to or destined for the cavalry, the tactics, exercise, and police of cavalry; those for the infantry, the tactics of infantry, and all that concerns the police of an army in the field and in quarters.

"The school of the Navy to teach those appointed to or designed for this service the application of the knowledge acquired in the fundamental school in arithmetic, algebra, geometry, statics, and navigation. To this end, after having passed examination, they shall make voyages or cruises, under skillful officers for certain periods, during which time they ought to be exercised in the manœuvres and observations most useful in service and be instructed in whatever respects rigging of vessels of war, pilotage, and the management of cannons."

* * * * *

"These schools to be provided with proper apparatus and instruments for philosophical and chemical experiments, for astronomical and nautical observations, for surveying and such other processes as are requisite to the several topics and branches of instruction."

* * * * *

"It would also tend greatly to the perfection of the plan if the Academy of Artillerists and Engineers was situated in the neighborhood of foundries of cannon and manufactories of small arms."

* * * * *

"Will it be thought superfluous to remark, relative to the utility of this institution, that it is from the military schools of France, have issued those general and other officers whose skill and recent achievements in war have rendered them subjects for military history, and en-

abled the present governors of that nation successively, and almost instantaneously, to form immense disciplined armies."

Finally, in 1802, the Military Academy was established by an act of Congress, which, separating the artillerists and engineers, constituted the corps of engineers the Military Academy.

This corps was to consist of seven officers and ten cadets, and the President was authorized to increase it, so that the whole corps, including officers and cadets, should not exceed twenty.

Two artillery cadets were attached to each of the twenty companies of that arm. The Academy was supplied with books, implements, and apparatus, but not with teachers until the year following, when a teacher of French and a teacher of drawing were added to it, and authority was given to enlist one artificer and eighteen men "to aid in making practical experiments, and for other purposes."

The experience of a few years showed the necessity of an enlarged organization for the Academy and an increase in the number of officers educated as engineers. In 1812 its organization was completely changed, and its dimensions were greatly extended. It was made to consist of the corps of engineers (increased by the same act), and the following professors; a professor of natural and experimental philosophy; a professor of engineering, and a professor of mathematics, with an assistant professor to each; a teacher of the French language, and a teacher of drawing; and the President was authorized to attach the 256 cadets allowed to the artillery, cavalry, riflemen, and infantry, as well as those of engineers, to the academy as students, provided the whole number should at no time exceed 250.

Prior to 1817, the Academy was conducted with but little system or regularity. Cadets were admitted without regard to age or qualification, and promoted to the rank of commissioned officers in the Army without a fixed system of probation, and with but slight consideration for proficiency in study.

Notwithstanding its imperfect training, the Military Academy had already served the purpose of making the Army independent of officers taught in the military schools of Europe, and so apparent were the benefits conferred by it upon the country that, in 1819, the Secretary of War, the Hon. J. C. Calhoun, recommended the establishment of a second school of the same character and on the same scale as that at West Point, and a school of application, in which the theoretical studies of the military academies would find their special application in the subjects of artillery, engineering, and topography.

The report of General Bernard and Colonel McRae upon this subject was appended to the letter of the Secretary of War. The views of those officers were, in brief, that, in determining upon a system of military instruction, it should be considered that there were two methods: *First*. That the officers of each arm of the service should be exclusively instructed in the theory and practice of that arm. *Second*, That the officers of each arm should be equally instructed in the theory and practice of all the other arms. The first is insufficient, because it leaves the officers of an arm deficient in what is necessary to connect the operations of that arm with the operations of the rest, as parts of one general system. The second is usually impracticable, "because it is the privilege of but few individuals to possess that facility of intellect which is requisite to embrace four branches of knowledge as extensive as are those in question, and to practice them all with that correctness and promptitude which is the peculiar advantage of such as devote themselves principally to but one of these branches. In order to avoid both these inconveniences, the theoretical and practical knowl-

edge necessary in the conduct and operations of an army has been divided into two distinct classes, the one embracing whatever is common to all the arms; the other confined to what particularly appertains to each arm."

Hence, military instruction is usually given in two classes of schools: One where the theory and practice common to all arms is taught; the other class where the theory and practice of each arm is especially taught. In countries having large armies, not only is this classification of schools made, but each arm has its school of application; but those nations who in peace keep up small armies find it advantageous to unite as far as possible the different schools of application in one. The Military Academy, as then conducted, was regarded by them as an elementary school only; and they proposed that a school of application for engineering, artillery, and topography should be established, either by addition to the Academy at West Point, or by separate organization at some other locality. From a variety of considerations, this division of schools was never made; and it cannot be considered as in the least degree probable that special schools of application will be established.

The varied duties imposed upon officers of the Army of the United States, in every corps and arm of service, demand of each, in the usual routine of service, performance of the ordinary duties of all corps. The peculiar character of our military system, retaining in time of peace a body of well instructed officers and men, that can, upon the occurrence of war, disseminate military knowledge and discipline among large bodies of hastily assembled and undisciplined troops, the staff of which must be principally formed from the officers of the permanent Army, renders it necessary that officers, whether of infantry, mounted corps, artillery, or engineers, should receive the theoretical, applied, and practical instruction of engineers.

The great deficiency of the Academy in 1817 was in that theoretical instruction which must precede and form the basis of practical teaching; and the chief efforts of the distinguished officer appointed to the command of the Academy in 1817 were first directed to substituting for the imperfect, partial, and irregular teaching that had prevailed, a thorough course of theoretical instruction in the sciences and arts, such as was taught in the best military schools of Europe. In 1824 the object of the Superintendent was accomplished, and the Military Academy had attained the eminent position it still holds for scientific and military instruction. It was then, as now, the policy of our government to admit youths to the Academy who had made but little progress in scholastic attainment, and it was impossible in a term of four years, to which the course was limited, to impart all the practical, as well as all the theoretical knowledge required to fit an officer to enter upon the active discharge of his duties. Only those branches of practical instruction deemed most pressing could receive a proper share of attention.

Since that time its organization has been extended, and its teaching has been expanded to keep pace with the growth of science and the improvements in the implements and art of war, and the enlarged range of duties devolved upon officers of the Army by the changed condition of the country and the increase of territorial possessions.

As already stated, a large number of the cadets must necessarily enter the Academy with a very deficient knowledge of their own language and literature. For a quarter of a century the defect in the education of the graduates from this source was annually the subject of comment in the reports of boards of visitors. To remedy this defect; to introduce instruction in a foreign language, rendered necessary by

our political and military relations with a nation speaking it; to keep pace with the scientific progress of our country, and the improvements in the art of war which science has introduced, and to give that degree of practical instruction requisite to an officer in the outset of his career, the course of instruction was increased to a term of five years.

As at present organized and conducted, the Military Academy consists of a Superintendent and Commandant of the Post, with the local rank of a Colonel of Engineers;

- One Professor of Military and Civil Engineering;
- Two Acting Assistant Professors of Military and Civil Engineering;
- One Professor of Natural and Experimental Philosophy;
- One Assistant Professor of Philosophy;
- Two Acting Assistant Professors of Philosophy;
- One Professor of Mathematics;
- One Assistant Professor of Mathematics;
- Four Acting Assistant Professors of Mathematics;
- One Commandant of Cadets and Instructor of Artillery, Cavalry, and Infantry Tactics, with local rank of Lieutenant-Colonel of Engineers;
- One Assistant Instructor of Artillery;
- One Assistant Instructor of Infantry Tactics;
- Two Assistant Instructors of Cavalry;
- One Assistant Instructor of Infantry Tactics;
- One Professor of Drawing;
- One Assistant Professor of Drawing;
- One Acting Assistant Professor of Drawing;
- One Professor of the French Language;
- One Assistant Professor of the French Language;
- One Acting Assistant Professor of the French Language;
- One Chaplain and Professor of Geography, History, and Ethics;
- One Assistant Professor of Geography, History, and Ethics;
- Three Acting Assistant Professors of Geography, History and Ethics;
- One Professor of Chemistry, Mineralogy, and Geology;
- One Assistant Professor of Chemistry, Mineralogy, and Geology;
- One Professor of the Spanish Language;
- One Assistant Instructor of the Spanish Language;
- One Acting Assistant Instructor of the Spanish Language;
- One Instructor of Ordnance and Gunnery;
- One Instructor of Practical Military Engineering;
- One Assistant Instructor of Practical Engineering;
- One Instructor in the use of Small Arms;
- One Sword Master, Assistant to the Instructor in the use of Small Arms;
- One Adjutant;
- One Surgeon;
- Two Assistant Surgeons;
- One Treasurer; and
- One Quartermaster.

According to the acts of 1802 and 1812, which have not been repealed, the Corps of Engineers forms part of the Military Academy, but those acts have long ceased to be regarded in those particulars, wherein the duties subsequently imposed upon the Corps of Engineers have rendered it impracticable to comply with them. The commander of the Corps of Engineers, from being the Superintendent, has become the Inspector. In the absence of the commander the next in rank is not Superintendent, but an officer of that corps is assigned to the superintendency by orders from the War Department.

The course of instruction is exhibited in the following programme:

Year.	Class.	Studies.	TIME.		
			A. M.	P. M.	
First.....	Fifth.....	Mathematics..... English studies..... Fencing.....	8 to 11 12 to 1 12 to 1	..... 2 to 4 3 to 4	Daily. Daily, except Saturday. Every other day except Saturday.
Second.....	Fourth.....	Mathematics..... French..... English studies..... Fencing.....	8 to 11 11 to 1 11 to 1	..... 2 to 4 1 1	Daily. Daily. Do. Every other day.
Third.....	Third.....	Philosophy, natural and experimental..... French and Spanish alternating till January..... Spanish..... Drawing..... } alternating Riding..... }	8 to 11 11 to 1 11 to 1	..... 1 1 2 to 4	Daily. { Alternating with each other—September, October, November, and December; daily—January, February, March, April, and May; recitation in Spanish after January; may be from 11 to 4 p. m. { Five times in two weeks. { Riding may be from 2 to 5 p. m.
Fourth.....	Second.....	Moral science, history of philosophy, logic, &c. Cavalry tactics, equitation, and outposts; infantry tactics and strategy, artillery and grand tactics, and organization of armies. Chemistry..... Riding..... Drawing.....	8 to 11 8 to 11 11 to 1 11 to 1	..... ..... 1 2 to 4	Every other week day. Every other week day, alternating with Moral Science, &c. Every other week day. Every other week day, alternating with Chemistry. Every week day except Saturday.
Fifth.....	First.....	Civil and military engineering..... Law, history, &c..... Mineralogy and geology..... Ordnance and gunnery..... Riding..... Practical engineering.....	8 to 11 11 to 1 11 to 1 or 11 to 1 and 11 to 1 and 11 to 1 and	..... 2 to 4 2 to 4 2 to 4 2 to 4 2 to 4	Every week day. Every other week day except Saturday; five recitations in two weeks. Every other week day except Saturday, from 1st September to end of first week in December, from 2 to 4 alternating with law, &c., and last three weeks of May to review, from 11 to 1, every other week day. Every other week day, from 1st October to end of first week in December, from 11 to 1, alternating with riding; then from 2 to 4 every other week day, except Saturday, April 1, alternating with law, history, &c. Every other week day except from 1st October to end of second week in November, and last three weeks in May. Every other week day, April and May, from 11 to 1, alternating with riding, until end of first week in May, and then with mineralogy and geology; also from 2 to 4, alternating with law, history, &c.; five recitations in two weeks.

MILITARY EDUCATION IN EUROPE.

The general nature and extent of the military education most suitable to the officers of our Army, arising from the peculiar condition of our country and its military system, have been already indicated. With this in view, it may be well to examine the systems of military education in Europe, and to compare them with our own. The following account of the military schools of Europe is taken almost wholly from the report of the British commissioners appointed to consider the best mode of reorganizing the English system of training officers for the scientific corps. When quotation marks are used in the following part of this paper, they indicate that the extracts are taken from the reports of those commissioners. The remarks relating to the discussion as to the best course of instruction for the Polytechnic School are derived from the report of the commission constituted, in 1850, to examine that subject.

Among the European systems of military education, that of France is pre-eminent. The stimulating principle of competition extends throughout the whole system; it exists in the appointment of the student, in his progress through the preliminary schools, in his transfer to the higher schools, in his promotion to the army, and in his advancement in his subsequent career. The distinguishing features of the French system are thus described by the British commissioners. The characteristic points of the French system are as follows:

"1. The proportion, founded apparently upon principle, which officers educated in military schools are made to bear to those promoted for service from the ranks; 2. The mature age at which military education begins; 3. The system of thorough competition on which it is founded; 4. The extensive state assistance afforded to successful candidates for entrance into military schools whenever their circumstances require it."

OFFICERS FROM THE MILITARY SCHOOLS.

The French army is officered partly from the military schools and partly by promotion from the ranks. The proportions established by law are one-third of the commissions from the military schools, one-third from the ranks of the army, and the remaining third at the discretion of the Emperor. In practice, two-thirds of the officers of engineers and artillery are taken from the Polytechnic School, and one-third from the ranks. All the officers of the staff corps are taken from the School of the Staff. One-third of the officers of infantry and cavalry are taken from St. Cyr, and two-thirds are promoted from the ranks. Promotion in the army is partly by seniority and partly by selection, to the rank of major. Above the rank of major promotion is entirely by selection.

Admission to the military schools of France can only be gained through a public competitive examination, by those who have received the degree of bachelor of science from the lycées or public schools, and from the orphan school of La Flèche.

A powerful influence has thus been exercised upon the character of education in France. The importance of certain studies has been gradually reduced, while those of a scientific character, entering more directly into the pursuits of life, have been constantly elevated.

The two great elementary military schools are the School of St. Cyr and the Polytechnic School. These, as well as the other military schools,

are under the charge of the Minister of War, with whom the authorities of the schools are in direct communication. Commissions in the infantry, cavalry, and marines can only be obtained by service in the ranks of the army, or by passing successfully through the School of St. Cyr, admission to which is gained by the competitive examination already referred to.

Entire or partial support is given by the government to those presenting evidence of the necessity of such aid, while those who are able pay for their education. Students from the orphan school of La Flèche, where the sons of officers wounded or killed in the service receive a gratuitous education, are maintained in the same manner.

THE SPECIAL MILITARY SCHOOL OF ST. CYR.

The school of St. Cyr was established in 1803.

"The course of study lasts two years; the usual number of cadets in time of peace is five or, at the utmost, six hundred; the admission is by competitive examination, open to all youths, French by birth or by naturalization, who, on the 1st of January preceeding their candidature, were not less than sixteen and not more than twenty years old. To this examination are also admitted soldiers in the ranks between twenty and twenty-five years of age, who, at the date of its commencement, have been actually in service in their regiments for two years."

A board of examiners passes through France once every year, and examines all who present themselves having the prescribed qualifications. All the candidates must have taken the usual degree which terminates the task at the *Lycées*—the baccalaureate in sciences.

A list of such candidates as are found eligible for admission to St. Cyr is submitted to the Minister of War. The number of vacancies has already been determined, and the candidates admitted are taken in the order of merit.

"Those who succeed in the examination and are admitted take an engagement to serve seven years either in the cavalry or infantry, and are thus under the obligation—if they are judged incompetent at the close of their two years' stay at the school, to receive a commission—to enter and serve as common soldiers. The two years of their stay at the school counts as a part of their service. It is only in the special case of loss of time caused by illness that permission is given to remain a third year." * * * * *

"It was the rule till lately that cadets appointed, on leaving St. Cyr, to the cavalry, should be placed for two years at the cavalry school at Saumur. This, however, has recently been changed. On entering St. Cyr those who desire appointments in the cavalry declare their wishes, and are put at once through a course of training in horsemanship. Those who are found unfit are quickly withdrawn; the remainder, if their place on the final examination allows of their appointment to the cavalry, are by that time sufficiently well practiced to be able to join their regiments at once.

"Twenty-seven, or sometimes a greater number, are annually, at the close of their second year of study, placed in competition with twenty-five candidates from the second lieutenants belonging to the army, if so many are forthcoming, for admission to the staff school at Paris. This advantage is one object which serves as a stimulus to exertion, the permission being given according to rank in the classification by order of merit.

"The school consists of two divisions, the upper and the lower, cor-

responding to the two years of the course. Each division is divided again into four companies. In each of these eight companies there are sub-officers chosen from the *élèves* themselves, with the titles of *sergent*, *sergent-fourrier*, *caporal* [sergeant, quartermaster sergeant, and corporal]; those appointed to the companies of the junior division are selected from the second year cadets, and their superiority in standing appears to give these latter some considerable authority, exercised occasionally well, occasionally ill. The whole school, thus divided into eight companies, constitutes one battalion.

"The establishment for conducting the school consists of—

"A general as commandant.

"A second in command (a colonel of infantry).

"A major, four captains, twelve lieutenants, and five second lieutenants of infantry; the major holding the office of commandant of the battalion.

"A major, one captain, thirty four lieutenants, and three second lieutenants of cavalry to superintend the exercises, the riding, &c.

"A director of studies (at present a lieutenant-colonel of engineers).

"Two assistant directors.

"Six examiners for admission.

"One professor of artillery.

"One assistant of artillery.

"One professor of topography and mathematics.

"One professor of military administration, military art, and military history.

"One professor of fortification.

"One professor of military literature.

"Two professors of history and geography.

"One professor of descriptive geometry.

"One professor of physics and chemistry.

"Three professors of drawing.

"One professor of German.

"Eleven military and six civilian assistant teachers (*répétiteurs*).

"There is also a quartermaster, a treasurer, a steward, a secretary of the archives, who is also librarian, an almoner (a clergyman), four or five surgeons, a veterinary surgeon, who gives lessons on the subject, and twelve fencing masters.

"The professors and teachers are almost entirely military men. Some difficulty appears to be found by civilians in keeping sufficient order in the large classes; and it has been found useful to have as *répétiteurs* persons who could also be employed in maintaining discipline in the house. Among the professors, at present, there are several officers of the engineers and of the artillery, and of the staff corps.

"There is a board of council of instruction, composed of the commandant, the second in command, one of the field officers of the school staff, the directors of studies, one of the assistant directors, and four professors.

"So, again, the commandant, the second in command, one of the field officers, two captains, and two lieutenants—the last four changing every year—compose the board or council of discipline.

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"The cavalry cadets ride three hours a day, those of the infantry about one hour a week.

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"Young men intended for the cavalry are instructed in infantry and artillery movements and drill, just as those intended for the infantry

are taught riding, and receive instruction in cavalry as well as artillery drill and movements.

"It is during the second year of their stay they receive most instruction in the arms of the service to which they are not destined, and this, it is said, is a most important part of their instruction. 'It is this,' said the General Commandant, 'that made it practicable, for example, in the Crimea, to find among the old *élèves* of St. Cyr officers fit for the artillery, the engineers, the staff; and for general officers, of course, it is of the greatest advantage to have known from actual study something of every branch.

The subjects of examination for admission to the school are the following: 1. Arithmetic; 2. Algebra; 3. Geometry; 4. Plane Trigonometry; 5. Geometrical representations of bodies by projections; 6. French compositions; 7. German language; 8. Elementary drawing; 9. Physical science (merely descriptive); 10. Elementary chemistry; 11. History of France; 12. Geography of France and its colonies, physical and statistical. The entrance examination is less severe than that for the Polytechnic School.

"The general system of instruction at St. Cyr is similar to that of the Polytechnic. The lectures are given by the professors, notes are taken [by the students] and completed afterwards, and progress is tested in occasional *interrogations* by the *répétiteurs*. One distinction is the different size of the *salles d'étude* (containing 200 instead of 8 or 10), but, above all, is the great and predominant attention paid to the practical part of military teaching and training. It is evident, at the first sight, that this is essentially a military school, and that special importance is attached both by teachers and pupils to the drill, exercise, and maneuvers of the various arms of the service. The course of study is completed in two years; that of the first year consists of—

"27 lectures in descriptive geometry.

35 " physical science.

20 " military literature.

35 " history.

27 lectures in geography (including physical) and military statistics.

30 lectures in German."

Total, 174

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"The studies for the first division during the second year of their residence consist of—

"10 lectures in topography.

27 " fortification.

15 " artillery.

10 " military legislation.

12 " military administration.

27 " military art and history.

20 " German.

Total, 121

"One lesson weekly is given in drawing, in order to render the students expert in landscape and military drawing, with the pencil, pen, and brush.

"We must not omit to call attention to the fact that mathematics are not taught in either yearly course at St. Cyr.

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"The students also execute certain works, such as the making of fascines, gabions, saucissons, repair of revetments of batteries, platform, setting the profiles, defilement, and construction of a fieldwork, different kinds of sap, plan and establishment of a camp for a battalion of infantry, &c.

* * * * *

"The students are practically taught artillery drill, with field and siege guns, practice with artillery, repair of siege batteries, bridges of boats or rafts.

"The ten lectures allowed for the course of *military legislation* have for their object the explanation of the principles, practice, and regulations relating to military laws, and the connection with the civil laws that affect military men.

"The twelve lectures on what is called *military administration* relate to the interior economy of a company, and to the various matters appertaining to the soldier's messing, mode of payment, necessaries, equipment, lodging, &c.

* * * * *

"In the practical exercises, the students make an attack or defense of a work, or of a system of field-works, during their course of fortification, or of a house, farm, village, in the immediate vicinity of the school, or make the passage of a river."

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EXAMINATIONS AT THE SCHOOL.

"The examinations at the end of the first year take place under the superintendence of the director and assistant director of studies. They are conducted by the professor of each branch of study, assisted by a *répétiteur*, each of whom assigns a credit to the student under examination, and the mean, expressed as a whole number, represents the result of the student's examination in that particular branch of study.

* * * * *

"The pupil's position is determined, as at the Polytechnic, partly by the marks gained at the examination, partly by those he has obtained during his previous studies."

Any student, whose credit is less than the minimum allowed for any branch of study, is retained during the vacation and re-examined before the recommencement of the course. If still deficient, he is reported to the Minister of War for expulsion, unless there is an especial ground for excuse, such as sickness. Irregularity of conduct is also made a ground for exclusion from the school, and a system of demerit marks is established. The demerit of a student has an influence upon his class standing.

"The classification in the order of merit depends upon the total amount of the sum of the numerical marks or credit obtained by each student in every branch of study or instruction. The numerical credit in each subject is found by multiplying the credit awarded in each subject by the coefficient of influence belonging to it."

The final examination and classification at the end of the second year's course are conducted in the same manner as those at the end of the first year's course.

"A list of the names of those students who are found qualified for the rank of second lieutenant is sent to the Minister of War, and a second list is also sent, containing the names of those students that have, when

subjected to a second or revised examination, been pronounced by the jury, before whom they were re-examined, as qualified.

“Those whose names appear in the first list are permitted to choose, according to their position in the order of merit, the staff corps or infantry, according to the number required for the first-named service, and to name the regiments of infantry in which they desire to serve.

“Those intended for the cavalry are placed at the disposal of the officer commanding the regiment which they wish to enter.

“Those whose names appear in the second list are not permitted to choose their corps, but are placed by the Minister of War in such corps as may have vacancies in it, or where he may think proper.

“The students who are selected to enter the staff corps, after competing successfully with the second lieutenants of the army, proceed as second lieutenants to the staff school at Paris.

“Those students who fail pass into the army as privates, according to the terms of the engagement made on entering the school.”

THE POLYTECHNIC SCHOOL.

The other elementary military school, the Polytechnic, is mainly a preparatory school for those branches of the French army which are termed scientific, as three-fourths of its pupils enter the artillery, the engineers, and the staff. It also exclusively supplies some important departments of the civil service. Its scientific teaching is unsurpassed, perhaps unequaled. It was founded during the French revolution, in 1794. A few years before its creation, all schools, military as well as civil, had been suppressed. The ill effects of this destruction of all means of education were first perceived in the army and in the public works. The result was the establishment of the Polytechnic School for the preliminary education of engineers and artillerymen. Its benefits were extended to the civil service. Among the founders were Carnot, Monge, and La Grange. In five months after the project of the school was announced, it was opened with nearly 400 scholars. Its organization was modified from time to time, until, in 1809, it received the form it now holds. Its system of instruction remains the same as when established.

The public services for which it gives a general preparation are—

1. The artillery.
2. The engineers.
3. The staff corps.
4. The department of powder and saltpeter.
5. The marine artillery.
6. The naval architects.
7. The corps of hydrographers.
8. The corps of roads and bridges.
9. The department of mines.
10. The telegraph department.
11. The tobacco department.

Upon quitting the Polytechnic, the student enters the school of application especially devoted to the particular service to which he is assigned.

“Admission to the school is, and has been since its first commencement in 1794, obtained by competition in a general examination, held yearly and open to all. Every French youth between the ages of sixteen and twenty (or if in the army, up to the age of twenty-five) may offer himself as a candidate.

"A board of examiners passes through France once every year and examines all who present themselves, that" possess the requisites of age, &c.

"A list of such of the candidates as are found eligible for admittance to the Polytechnic is drawn up from the proceedings of the board, and submitted to the Minister of War. The number of places vacant has already been determined, and the minister fixes the number of admissions accordingly. The candidates admitted are invariably taken in the order of merit."

All the successful candidates whose parents are unable to maintain them at the school in whole or in part, are supported by the state to the extent necessary.

"The course of study is completed in two years. On its successful termination, which is preceded by a final examination, the students are distributed into the different services, the choice being offered them in the order of their merit, as laid down in the classified list drawn up after the examination. If it so happen that the number of places or the services which can be offered is not sufficient for the number of qualified students, those at the bottom of the list are offered service in the infantry or cavalry, and those who do not enter the public service are supplied with certificates of having passed successfully through the school. Students who have been admitted into the school from the Army, are obliged to re-enter the army.

"All others, as has been said, have the right of choosing, according to their position on the list, the service which they prefer, so far, that is, as the number of vacancies in that service will allow; or they may, if they please, decline to enter the public service at all.

"Such is a general outline of the plan and object of the school. We may add that, besides its military staff, it employs no less than thirty-nine professors and teachers; that it has four boards of management; and that ten scientific men, unconnected with the school, and among the most distinguished in France, conduct its examinations. The magnitude of this establishment for teaching may be estimated by the fact that the number of pupils rarely exceeds three hundred and fifty, and is often much less." * * * *

"I. The Military Establishment consists of—

"The commandant, a general officer, usually of the artillery or the engineers. * * * *

"A second in command, a colonel or lieutenant-colonel, chosen from former pupils of the school. * * * *

"Three captains of artillery and three captains of engineers, as inspectors of studies, chosen also from former pupils of the school.

"Six adjutants (*adjoints*), non commissioned officers, usually such as have been recommended for promotion.

"II. The Civil Establishment consists of—

"1. A director of studies, who" is generally a civilian, but sometimes an officer of engineers or artillery. He has special superintendence of all educational details.

"2. Fifteen professors, viz: two of mathematical analysis; two of mechanics and machinery; one of descriptive geometry; two of physics; two of chemistry; one of military art and fortification; one of geodesy; one of architecture; one of French composition; one of German; one of drawing. Of these, one is an officer of the staff, another of the artillery, and a third of the navy; two are engineers-in-chief of the roads and bridges; nine are civilians, of whom two are members of the Academy of Sciences.

"3. Three drawing masters for landscape and figure drawing, one for machine drawing, and one for topographical drawing.

"4. Nineteen assistants and extra assistant teachers (*répétiteurs* and *répétiteurs adjoints*), whose names and functions are both peculiar.

"5. Five examiners for admission, consisting, at present, of one colonel of artillery and four civilians.

"6. Five examiners of students (civilans), four of them belonging to the Academy of Sciences.

"7. There is also a separate department for the ordinary management or administration of the affairs of the school, the charge of the fabric, and of the library and museums, and a medical staff.

"III. The general control or supervision of the school is vested, under the War Department, in four great boards or councils, viz :

"1. A board of administration, composed of the commandant, the second in command, the director of studies, two professors, two captains, and two members of the administrative staff. This board has the superintendence of all the financial business, and all the minutæ of the internal administration of the school.

"2. A board of discipline, consisting of the second in command, the director, two professors, three captains (of the school), and two captains of the army chosen from former pupils. The duty of this board is to decide upon cases of misconduct.

"3. A board of instruction, whose members are—the commandant, the second in command, the director, the examiners of students, and the professors; and whose chief duty is to make recommendations relating to ameliorations in the studies, the programmes of admission and of instruction in the school, to

"4. A board of improvement, charged with the general control of the studies, formed of—

"The commandant, as president.

"The second in command.

"The director of studies.

"Two delegates from the department of public works.

"One delegate from the naval department.

"One delegate from the home department.

"Three delegates from the war department.

"Two delegates from the Academy of Sciences.

"Two examiners of students.

"Three professors of the school."

CONDITIONS AND EXAMINATIONS FOR ADMISSION.

"The entrance examination is held yearly, in August. The most important conditions for admission to it are always inserted in the *Moniteur* early in the year, and are—

"First. All candidates must be bachelors of science.

"Second. All candidates (unless they have served in the army) must have been as much as sixteen and not more than twenty years old on the 1st of January preceding.

"Third. Privates and non-commissioned officers of the army must be above twenty and under twenty five years of age, must have served two years, and have a certificate of good conduct.

"Fourth. Candidates who propose to claim pecuniary assistance (*a bourse* or *demi bourse*) must present formal proofs of their need of it.

"The subjects of the entrance examination are the following :

"Arithmetic. * * * * *

"Geometry.	*	*	*	*	*	*
"Algebra.	*	*	*	*	*	*
"Plain and spherical trigonometry.				*	*	*
"Analytical geometry.	*	*	*	*	*	*
"Geometry of three dimensions.		*	*	*	*	*
"Descriptive geometry.	*	*	*	*	*	*
"Mechanics.	*	*	*	*	*	*
"Natural philosophy.	*	*	*	*	*	*

"Chemistry, the elements; French, German, drawing, and (option ally) Latin."

A list, in the order of merit, of those found qualified for admission is submitted to the Minister of War, by whom the appointments are made.

THE DIVISIONS OF THE STUDENTS.

"ART. VI. The students of the Polytechnic School form a battalion containing two divisions or companies. The first division consists of those students who follow the courses allotted to the second year, whilst those of the second division attend the courses of the first year."

They are taught, though without arms, the different military manœuvres.

"ART. VII. In each division the students are distributed into a certain number of rooms for study; of dormitories, for sleep; of tables, for meals; and of laboratories, for the chemical manipulations. The whole division assembles in the same amphitheater for the oral lectures, and in the same class-room for the drawing lessons.

"ART. VIII. The places occupied by the students in every part of the establishment are assigned by the second in command, in pursuance of an order issued by the commandant; no pupil is allowed to change his place without permission from the above officer.

"ART. IX. In each company the staff consists of a captain, an adjutant, a sergeant major, a quartermaster sergeant, and six sergeants; the number of the latter may, however, be increased if the number of studying rooms (*salles d'étude*) shall require it.

"CHAPTER III. THE STUDENT OFFICERS.

"ART. X. The sergeant majors, quartermaster sergeants, and sergeants are exclusively chosen from among the students; they are appointed by the commandant.

* * * * *

"ART. XII. In each studying room (*salle d'étude*) one of the pupils bearing a grade takes the place of chief. As far as it is feasible, a graded student is also placed in each dormitory, in each laboratory, and at every table.

"In case of there being more than one in any of these places, the title of chief or head student belongs to the one who holds the highest place of merit."

The first year's course of study is divided into three portions; two, of about four months each, are mainly given to lecturing, with an additional fortnight of study and examination; the third portion consists of two months, and is devoted entirely to study and examinations.

The course of instruction is—

Analysis.

Mechanics and machines.

Descriptive geometry.

Physics.

Chemistry.

Geodesy.

French literature.

German.

Figure and landscape drawing.

The course of the second year is divided in the same manner as the first. It consists of—

Analysis.

Mechanics and machines.

Stereotomy.

Chemistry.

Architecture and construction.

Military art and fortification.

Topography.

French literature.

German.

Figure and landscape drawing.

“The method of scientific teaching has been peculiar from the beginning. It is the most energetic form of what may be called the *repetitorial* system—a method of teaching almost peculiar to France, and which may be described as a very able combination of professional and tutorial teaching. The object of the *répétiteur*, or private tutor, is to second every lecture of the professor, to explain and fix it by ocular demonstration, explanation, or examination. This was a peculiarity in the scheme of Monge and Fourcroy. The latter said, in the first programme: ‘Our pupils must not only learn, they must at once carry out their theory. We must distribute them into small rooms, where they shall practice the plans of descriptive geometry which the professors have just shown them in their public lectures. And in the same manner they must go over in practice (*répéteront*), in separate laboratories, the principal operations of chemistry.’ To carry out this system the twenty best pupils, of whom Mr. Biot was one, were selected as *répétiteurs* soon after the school had started. Since then the vacancies have always been filled by young but competent men, aspiring themselves to become, in turn, professors.”

* * * * *

“Working on its first idea of high professional lectures, practically applied and explained by *répétiteurs*, its success in its own purely scientific line was, and has continued to be, astonishing. Out of its sixteen earliest professors, ten still retain an European name. Lagrange, Monge, Fourcroy, La Place, Guyton de Morveau, were connected with it. Malus, Haüy, Biot, Poisson, and De Barante were among its earliest pupils. Arago, Cauchy, Cavaignac, Lamoricière, with many more modern names, come later. All the great engineers and artillerymen of the empire belonged to it; and the long pages in its calendar of distinguished men are the measure of its influence on the civil and military services of France. In fact, its pupils, at a time of enormous demands, supplied all the scientific offices of the army, and directed all the chief public works, fortresses, arsenals, the improvements of cities, the great lines of roads, ship-building, mining; carried out, in a word, most of the great improvements of Napoleon. He knew the value of his school, ‘the hen,’ as he called it, ‘that laid him golden eggs,’ and perhaps its young pupils were not improved by the excessive official patronage bestowed by him upon ‘the envy of Europe,’ ‘the first

school in the world? It cannot, however, be matter of surprise that its vigor and success should have caused Frenchmen, even those who criticise its influence severely, to regard it with pride as an institution unrivaled for scientific purposes."

An hour and a half is assigned to the lecture upon each subject. The first half hour is occupied with questions put by the professor to the students relating to the previous lecture. The remaining hour is consumed in the lecture, rough notes of which the student must take. The lecture concluded, the pupils are conducted to the study halls, each containing from eight to ten students, where they devote one hour to completing and writing out in full the notes of the lecture.

The professor and his assistants, the *répétiteurs*, make the circuit of the rooms to explain difficult points, ask questions, &c. The use of text books is not allowed. The professors require the students while in the study rooms to answer questions in writing on the course at the end of every three or four lectures. The *répétiteurs* examine at irregular intervals six or eight students every ten or fourteen days.

At the close of the course in each branch of study the professor and assistants examine the students in sections of four or six. At these examinations marks are affixed to each student's name according to the nature of his replies. In addition to these ordinary examinations there is an annual closing examination, which is conducted by special examiners, and not by the professors. These also give each student a credit according to the character of the examination he passes. The value attached to the different branches of study varies. This value is called the coefficient of influence. It varies likewise for the same branch in the examination by the *répétiteur*, in the examination by the professors and *répétiteurs*, and in the examination by the examiners, and also in the practical application. By combining it with the credit obtained in each branch of study the numerical amount of the student's credit is obtained.

Any student whose mean credit in any branch falls below the minimum allowed for that branch, or whose general mean credit falls below the minimum allowed, is excluded from the school, unless he has been prevented from pursuing his studies by illness.

During the second year the general examinations include the chief subjects of both years. A general list of all the students is made out, arranged in the order of merit. Formerly, conduct was permitted to exercise some influence on their position, but that is no longer the case. As already stated, the successful graduate has the right to choose the branch of the public service in which to enter, provided there is a vacancy, in the order of his position on the list. Since the wars of the First Empire those at the head of the list have generally entered into the civil rather than into the military service, the former being much better remunerated.

The services are usually selected in the following order :

The roads, and bridges, and mines ;

Powder and saltpeter ;

Naval architects ;

The engineers of the army ;

The artillery and staff corps ;

The hydrographical corps, &c.

This preference of the civil to the military service has been the subject of frequent complaints on the part of the military authorities to the Minister of War. No steps, have, however been taken by the

French Government to prevent the free choice of a profession being granted to the most successful students.

METHODS OF TEACHING—NATURE OF STUDIES.

The method of teaching has been described; it is well calculated to develop the minds of the gifted portion of the class; but as it requires the whole to move forward at the same pace, all the pupils to carry their studies in each branch to the same extent, without regard to differences in ability and power of application, either the upper portion of the class, the best intellects, must be kept back, restrained from advancing as far as they are capable of, or else the lower portion must be hurried over too much ground, and can acquire only a superficial knowledge of the subjects taught, or will be exhausted and enfeebled by their efforts. It is precisely this accusation that has been brought against the lower half of the class, and many of those who enter the scientific corps of the army. It has been said that many of them present themselves at the school of application of engineers and artilleryists, with a superficial knowledge of the exact sciences, with marks of premature exhaustion, without clear ideas of the object of much that was taught them, and without the ability to apply their knowledge to practice.

It is not understood that such complaints have been made of those pupils who enter the civil services, and in the contests that have arisen as to the best mode of adapting the teaching of the Polytechnic School to that of the special schools of application to which it conducts, the advocates of less abstract studies and more practical application, of more teaching of geometrical methods and less of analytical, have generally been officers of the army.

In the actual practice of the officer of engineers in France, great use is made of geometrical methods; they enter largely into the planning and construction of forts, field works, the works of a siege, and in all constructions; they also find extended application in the duties of the artilleryist. It is not surprising, therefore, that the officers of those arms of service, and the authorities of the engineer and artillery school of application at Metz should incline to substitute geometrical for analytical methods, and be disposed to attribute the defective acquirements imputed to many of those who join their school to the character of the studies pursued at the Polytechnic School rather than to the method of teaching. It is certain that they have charged that at the Polytechnic School theory was pushed too far; that there was not enough application of theory to practical examples, and that too much importance was given to the mathematical sciences, and especially to analysis. They have maintained that the synthetical methods should be used concurrently with the analytical; that, besides the rigorous solutions and formula the approximate methods which practice had shown to be necessary or convenient should be taught; that at the close of a subject, the principal applications of its formula should be explained, as well as the modifications they must undergo to become applicable to practice.

It was the opinion of many of the most distinguished men of science, that the course of instruction at the Polytechnic School was too extended, regard being had to the term of study, two years. That the teaching was in some respects too abstract, since the practical application of theorems was omitted from want of time; that, in physics particularly, the growth of science has caused too great an expansion in the teaching of that department; that the teaching in analysis and mechan-

ics was too much extended for the time that was available for those subjects; and that for that reason, the knowledge of them acquired had, in any case, but little precision or practical value, and was soon forgotten; that analysis had always been and should always be one of the most important studies of the school; but that the excessive developments it had received were originally intended for the voluntary study of the most advanced pupils, and not for the general instruction of the whole class; that geometrical methods offered a futile means of simplifying demonstrations and giving them reality; and that, in course of instruction intended for engineers, the explication of analysis to geometry should be included, and pains should be taken to exhibit the relations between the two and their points of contact; and that with them, theory should be rather an instrument to use than a subject to investigate; that the course of mechanics and machines should, in general, be taught rather geometrically than analytically; rather experimentally than in an abstract, theoretic, or demonstrative manner; that is to say, that the exposition of fundamental principles and general laws should be preceded by the exposition of the observations or experiments which have served to discover them. The equations or formulæ, which are the algebraic translation of these laws should be established *a posteriori*, as consequences of the principles, rather than *a priori*, as the result of calculations, and should especially be adapted to the wants of practical application.

A mixed commission of distinguished officers of the army and men of science was appointed in 1850, to examine the subject and recommend such changes as appeared necessary in the studies, and revise the programmes of instruction.

The changes they effected in the course of instruction were chiefly of the character indicated in the opinions of the men of science that have been quoted.

Some of the defects complained of by the officers of engineers and artillery were found to be attributable to other sources than the teaching of the Polytechnic School. One of these, and the chief, was that as the students had already received commissions in the army, the School of Application lacked that which had been the chief stimulus to study in the Polytechnic, the reward of a commission. This, doubtless, would be felt to a greater degree in the United States, in a school of application, where the students were commissioned officers. So far as we have any experience in schools partaking of that character, it leads to that conclusion.

It is certain that the Polytechnic School has elevated the teaching of the French schools, and has produced an extraordinary number of eminent men of science; has given a very high scientific education to the engineers of the public works of France, and has rendered the officers of the scientific corps of the French army superior in scientific acquirements to those of every other European service.

The method of teaching followed at West Point appears to be well calculated to give a thorough knowledge of the course of studies, and to avoid the evils attendant upon the attempt to carry all the pupils of a class equally far in every branch of study. In common with the Polytechnic School, it possesses the great stimulating power of highly rewarded competition. Each class, divided into sections of ten or twelve cadets, makes daily recitations from text books, which are preceded, accompanied, or followed by familiar as well as by formal lectures, by experiment, by illustrations, and by practical application in those branches to which this mode of instruction is applicable. Each section advances

independently of the other, and thus a considerable disparity of acquirement, dependent upon the capacity and power of application of the pupils, may exist, the more advanced extending their researches to the higher branches of each subject.

Credits are assigned by the professor or assistant at each recitation, and these, combined with the credits obtained at the two stated examinations of the year, form the basis of the merit roll of the class.

THE SCHOOL OF APPLICATION FOR THE ARTILLERY AND ENGINEERING AT METZ.

"The School of Application, at Metz, is the completion of the Polytechnic scientific training for most of its military pupils. They are sub-lieutenants on admission," averaging 21 years of age, "and they pursue during two years a course which is partly practical, but in which theory still holds a prominent place."

* * * * *

"The studies of artillery and engineer officers are conducted entirely in common for the first, and for two-thirds of the second year; but during the remaining third they diverge widely. Yet even at Metz the instruction of officers for the special arms is not held to be completed. They join their regiments upon leaving, and are employed in practical exercises with troops till they obtain the rank of Second Captain in their respective arms; then the training of artillery officers, apart from their men is, in a certain sense, resumed; they are sent to the arsenals, foundries, and manufactories of arms."

The schools of application for engineers and artillerists were suppressed at the beginning of the revolution, but upon the occurrence of the wars that soon followed provisional schools were established to give a brief course of rapid instruction to the officers needed for the protection of the invaded frontier. Subsequently these were made more permanent, connected with the Polytechnic, and finally established, in 1802, at Metz.

There are usually 140 or 150 students, consisting of two classes of about equal numbers. The system of instruction, of examinations, and of credits is generally the same as at the Polytechnic, except that there are no *répétiteurs*. A riding school is attached to the establishment, and drill exercises and riding are practiced daily. Much greater liberty is allowed the students than at the Polytechnic. They are sent upon surveying expeditions, and to measure and sketch machines in manufactories. These expeditions never occupy more than ten days at a time. Field fortifications and siege works are actually laid out upon the ground, and portions of the work in full relief are executed. The practical training is not extended, being merely sufficient to enable the *élèves* to commence their duties as officers understandingly.

THE STAFF AND GOVERNMENT.

"The staff of the institution consists of—

"One general officer, at present, a general of brigade of artillery, as commandant.

"One colonel or lieutenant-colonel, second in command and director of studies, at present a lieutenant-colonel of engineers.

"One major of artillery.

"One major of engineers.

"Five captains of artillery.

“ Three captains of engineers.

“ One surgeon (*médecin-major*).

“ The commandant is taken alternately from the artillery and engineers, and the command lasts for five years only.

“ The second in command is always chosen from that arm of the service which does not supply the commandant.

“ The inferior officers of each rank are taken in equal numbers from the two arms.

“ The staff of instructors is as follows:

“ One professor of artillery, at present a captain of artillery.

“ One assistant ditto, also a captain of artillery.

“ One professor of military art, charged with the course of military legislation and administration (a captain of engineers).

“ One professor of permanent fortification and of the attack and defense of places (a captain of engineers).

“ One assistant ditto (a captain of engineers).

“ One professor of the course of topography and geodesy (a captain of engineers).

“ One professor of sciences applied to the military arts.

“ One professor of mechanics applied to machines (a captain of artillery).

“ One professor of the course of construction (a captain of engineers).

“ One assistant ditto.

“ One professor of the German language (a civilian).

“ One professor of the veterinary art and riding (a captain of artillery).

“ One assistant ditto (a civilian).

“ One drawing master, chief of the drawing department (a civilian).

“ In all, nine professors, four assistant professors, and one drawing master.

“ The school employs, in addition, an administrative staff, consisting of—

“ A treasurer. } Both of whom must have been officers in the artillery or engineers.

“ A librarian. }

“ A principal clerk.

“ An assistant librarian.

“ Two storekeepers, intrusted with the *matériel* belonging to the two arms.

“ One skilled mechanic.

“ One skilled lithographer.

“ One fencing master.

“ Clerks and draughtsmen are provided as required.

“ The school is under the general superintendence of two boards or councils, the superior council and the administrative council.

“ The superior council consists of the general commandant, as president; the second in command, the director of studies, as vice president; the major of artillery and the major of engineers as permanent members; two captains of the establishment, one of each arm; two military professors, one of each arm; and one captain of the establishment; these five last being all removable at the general inspections.

“ The superior council has the duty of drawing up the programme of the studies of the year, of suggesting changes in the regulations relating both to studies and discipline; all subject to the approval of the Minister of War.”

The administrative council takes cognizance of the financial and other business matters of the school.

SUBJECTS AND METHOD OF STUDY.

"The studies at Metz consist of topography and geodesy, including military drawing and surveying under special circumstances; field fortification, military art and legislation, permanent fortification, and the attack and defense of fortified places, accompanied by a sham siege;"

* * * "architecture, as applicable to military buildings and fortifications; the theory and practice of construction, and artillery."

* * * "The instruction is given principally (as at the Polytechnic) by means of a series of lectures, and the knowledge which the students have acquired is first directly tested by requiring them to execute various kinds of surveys of ground, either with or without the use of instruments; to prepare drawings of buildings, workshops, and machines in full detail (plan, elevation, and sections) from the measurements they have recorded in their note-books or on their sketches, and to accompany such drawings with descriptive memoirs of all particulars and calculations that may be necessary to exhibit their purpose or efficiency; to draw up projects and lay out works of field and permanent fortification, or of those of attack or defense of a particular place on certain given data, or according to the nature of the ground; to design a military building, bridge, machine, or piece of ordnance, accompanied by estimates and descriptive memoirs, showing in what manner the instructions and conditions under which it was drawn up have been complied with; and to prepare a project for the amelioration of the works of defense of a specified portion of a fortified place known to be defective in some respects.

"The instruction during the first year's residence is common to the two arms, and the time is apportioned in the following manner, viz :

	days.
"Military art and legislation.....	33
"Topography and geodesy.....	47
"Field fortification.....	39
"Permanent fortification.....	88
"Theory and practice of construction.....	77
"Total.....	284

"The *sous lieutenants* who complete their first year's work are allowed nearly a month's vacation during November.

"The instruction given to the artillery and engineers during the second year's residence is not entirely the same. * * *

	Artill'y. Days.	Eng's. Days.
"Military art and legislation.....	2	2
"Topography and geodesy.....	28	28
"Attack and defense of places.....	44	44
"Permanent fortification.....	44	129
"Artillery, machines, &c.....	81	—
"Theory and practice of construction.....	46	42
	245	245
"Brought forward from last year.....	284	284
"Total.....	529	529

* * * "There is a short course on the veterinary art." * * *

FINAL EXAMINATION.

“The examination which takes place prior to their leaving the school of application is entirely conducted by a board of six officers, under the presidency of a general officer alternately of the artillery or engineers, the remaining members of the board consisting of a general officer of each corps and three field officers of these corps, the last three being specially charged with the duty of examining.

“The three examining members conduct the examination of the students in three branches of study; the first more particularly relating to artillery science, the second to engineering science, and the third to mechanical science in its connection with the art of war. The whole of the students who are to leave the school are first examined in such one or other of these branches of study as may be determined on.

“The final classification in the order of merit, in each arm of the service, is arranged after a comparison of the total of marks obtained by each student.

“The coefficients of influence for the present year are :

“For those particularly relating to artillery science	39.29
“For those particularly relating to engineering science	53.75
“For those particularly relating to mechanical science	43.00
“For talent in drawing, sketching, writing memoirs, &c	6.80
“For practical exercises	16.75
“Previous classification in the school	45.30

“So that the examination conducted by the jury of examiners exercises an influence on the position of the students very nearly approaching to two-thirds of the whole amount.

It is this final classification which determines their seniority in the respective services.”

SUBSEQUENT INSTRUCTION AND EMPLOYMENT.

“On quitting the School of Application at Metz, the sub-lieutenants of artillery and engineers, respectively, join the regiments to which they are then definitely assigned as second lieutenants, and continue to be employed in doing duty, and in receiving practical instruction with them, until they are promoted to the rank of second captain.

“The lieutenants of the artillery are employed on all duties that will tend to make them efficient artillery officers, and fully acquainted with all details connected with the drill, practice, and manœuvres of the artillery, and also with the interior economy and discipline of a regiment of artillery.

“After the officers of artillery are promoted to the rank of second captain, but not before, they are detached from their regiments, and successively sent into the various arsenals, cannon foundries, powder mills, and small-arm manufactories, pyrotechnic establishments, and workshops, in order that they may become practically acquainted with the whole of the processes connected with the manufacture and supply of artillery, rockets, small arms, powder, material of all kinds, tools, &c., and also with the construction and repair of the buildings and factories required for these purposes. Sometimes they are employed as assistants in these establishments. The inspectors of the arms of regi-

ments are selected from among those who have become acquainted with the manufacture of small arms.

"When promoted to first captains they again rejoin their regiments, so that they must not lose the qualifications and knowledge required from a good practical artillery officer."

THE SCHOOL OF APPLICATION FOR THE STAFF.

The French staff is the center from which issue, and to which are addressed, all orders and military correspondence.

The duties of the chief of the staff of a French army corps are, "to transmit the orders of the general; to execute those which he receives from him personally, for field works, pitching camps, reconnaissances, visits of posts, &c.; to correspond with the commanding officers of the artillery and the engineers, and with the commissariat, in order to keep the general exactly informed of the state of the different branches of the service; to be constantly in communication with the different corps, so as to be perfectly master of everything relating to them; to prepare for the commander-in-chief, and for the Minister of War, returns of the strength and position of the different corps and detachments, reports on marches and operations, and, in short, every necessary information. * * * * *

"The officers of the staff may further be charged with the direction of field works thrown up to cover camps and cantonments. * * * * *

"The war depot (*dépôt de la guerre*), was founded for the purpose of collecting and preserving military historical papers, reconnaissances, memoirs, and plans of battles; to preserve plans and manuscript maps, useful for military purposes, and to have them copied and published.

"It is divided into two sections—one charged with trigonometrical surveying, topography, plan drawing, and engraving; the other with historical composition, military statistics, the care of the library, the archives, plans, and maps. Each of these sections is under the direction of a colonel of the staff corps, who has under his orders several officers of his corps.

"The war depot has taken a large share in the preparation of the map of France."

The only means of entering the staff corps is through the Staff School of Application. Of the fifty student-officers which the school of application usually contains, twenty-five leave annually to enter the staff corps, and are replaced by an equal number.

"Entrance into the School of Application for the Staff Corps may be considered the reward of proficiency at St. Cyr, the twenty-two best pupils of which, together with three from the Polytechnic, constitute the ordinary yearly admission to this school. Strictly speaking, indeed, the twenty-seven best pupils from St. Cyr compete, for the entrance to the staff school, with an equal number of sub-lieutenants, who may obtain permission from their commanding officer to appear as candidates. But we were informed that few, if any, now present themselves.

"The course of teaching lasts for two years, no less than eighteen professors being employed, and the principal studies being topography, military art, and fortification. The pupils are carefully ranged in the order of merit at their different examinations, and enter the staff corps according to the places they finally obtain. Immediately on leaving the school they are made lieutenants, and are then sent to the infantry to

do duty for two years; and at the expiration of this time are attached, for an equal period, to the cavalry. They *may* finally be sent, but are not necessarily so, for a year, to the artillery or engineers.

* * * * *

"The staff of the school is composed as follows:

"The commandant, a general of brigade.

"The second in command, director of the studies, a colonel or lieutenant-colonel of the staff corps.

"A major of the staff corps, charged with the superintendence of the interior economy and the drills and exercises. Three captains of the same corps, charged with the details of the interior economy of the school, and to assist the major in the instruction of the officers in their military duties. The captains are required to take the direction of a portion of the topographical works on the ground.

"A medical officer.

"Thirteen military professors, or assistant professors, viz :

"A major or captain, professor of applied descriptive geometry.

"A major or captain, professor of astronomy, physical geography, and statistics.

"A major or captain, professor of geodesy, and topography.

"A major or captain of engineers, professor of fortification.

"A major or captain of artillery, professor of the instruction relative to his arm.

"A military sub-intendant, professor of military legislation and administration.

"A major or captain, professor of military art.

"A captain, assistant professor of descriptive geography, charged also to assist the professor of fortification.

"A captain, assistant professor of topography, charged also to assist the professor of geography.

"A major or captain of cavalry, professor of equitation; he acts under the immediate orders of the major of the college.

"Two lieutenants or second lieutenants of cavalry, assistant professors of equitation.

"An officer of cavalry, of the same rank, acting as paymaster to the riding detachment.

"The non-military professors are :

"Two professors of drawing.

"Two professors of German.

"A professor of fencing."

There are no *répétiteurs*.

"One hundred and forty-five horses are kept for the use of the student-officers, and eighty-two men belonging to the cavalry to look after them.

"Both the studies and examinations at the staff school hold an intermediate place between those of the Polytechnic and St. Cyr, being less abstract than the former, and higher and more difficult than the latter."

The examination for admission to the school of the staff takes place before a commission of officers composed of—

"A lieutenant-general president, appointed by the Minister of War.

"The director or chief of the Depot de la Guerre.

"The commandant of the School of Application.

"Four colonels or lieutenant-colonels of the staff, appointed by the Minister of War.

"A field officer, chosen from among the officers employed at the Depot de la Guerre, as a permanent secretary.

"This commission is also charged with drawing up and proposing regulations for the approval of the Minister of War, concerning the interior organization and the course of study to be followed in the school, and to make changes in the programmes for admission and for leaving the school.

"A very detailed account of the subjects of the entrance examination is drawn out and inserted in the *Journal Militaire* and the *Moniteur* every year. The following are the subjects:

- "1. Trigonometry and Topography.
- "2. Regular topography—the measuring of plane surfaces and leveling.
- "3. Irregular topography, plane trigonometry.
- "4. Military art and history, including—
 - "(a.) History of military institutions at the chief periods.
 - "(b.) Present composition of the French army.
 - "(c.) Organization of an army in the field.
 - "(d.) History of some of the most memorable campaigns, as those of 1796 and 1797, in Italy, and of 1805 and 1809, in Germany.
- "5. Artillery and science of projectiles.
- "6. Field fortification and castrametation.
- "7. Permanent fortification.
- "8. Military legislation.
- "9. Military administration.
- "10. Maneuvers.
- "11. German language.
- "12. Drawing.

"The marks assigned and the influence allowed to each of these subjects are the same as those given in the final examination at St. Cyr. The entrance examination places the students in order of merit.

"THE STUDIES.

"All the details of the teaching are in the hands of a council of instruction similar to that of the Polytechnic, and consisting of the general commandant (president), the director of studies, and three military professors appointed yearly by rotation. Other professors and assistant professors, or officers of the staff of the school, may be called in to assist the council; but, except in deciding the list at an examination, they have no votes.

"This council does not interfere directly with the administration, the common work of the school. It draws up, indeed, the list of lectures, making any alteration in them or in the books to be used which may seem from time to time desirable; but the officer accountable for the daily working of the school is the director of studies."

The work for three months in the year is almost entirely in the open air, consisting in making plans and military sketches; eight months are devoted to the in-door studies; one month to the examination.

The subjects of study are—

- During the first year: Applied descriptive geometry.
- Astronomy.
- Military topography.
- Field fortification.
- The military art and tactics.
- Military administration and legislation.
- Maneuvers.

Drawing.
 The German language.
 Keeping memorandum books.
 Riding and veterinary art.
 Fencing, infantry drill, and cavalry drill.
 During the second year: Military geography and statistics.
 Geodesy and topography.
 Artillery.
 Field fortification.
 Military administration.
 Military art.
 Maneuvers.
 The German language.
 Drawing.
 Keeping of notes.
 Riding and veterinary art.
 Fencing, infantry drill, and cavalry drill.

There are two examinations each year conducted by a board consisting of the general commandant or the director of studies, the professor of the course examined in, and two officers appointed by the council of instruction.

Credits are given as in the other schools, and a list of the students is made out in the order of merit.

Prior to admission into the staff corps the students are obliged to pass an examination before the consulting committee of the staff corps, consisting of—

“Three generals of division on the staff.

“Three generals of brigade.

“Three colonels of the staff.

“Five lieutenant colonels, including the secretary.

“The professors belonging to the school may be called in to assist at this examination, and when it is concluded, the consulting committee proceeds to the definitive classification of the student officers.

* * * * *

“Every student officer who, in this examination for leaving, has not obtained the half of the maximum number of numerical credits is considered to be inadmissible to the staff corps.

“This classified list, prepared by the consulting committee of the staff corps, fixes the position of the student officers in order of merit, and according to this order of merit they enter the staff corps. The committee reports to the Minister of War the names of the student officers that are not eligible for the staff corps.”

Remarks.

This review of the French military schools will probably serve to give an idea of the character of the education considered necessary for an officer of the French army, and the length of time required to accomplish it.

The mode of gaining admission into their military schools is entirely different from ours. The qualifications for admission to the West Point Academy are merely reading, writing, and arithmetic, and, for reasons stated elsewhere at length, it is not considered desirable that either the qualifications or the mode of appointment should be changed. The students of St. Cyr and the Polytechnic enter those schools with an amount of knowledge and acquirement the equivalent of which is scarcely attained at the end of the first year at West Point.

The study of the mathematics at West Point is carried to about the same extent as at the Polytechnic; and the same remark may be applied to the study of mechanics and physics. In military literature, military history, and military geography and statistics, which constitute nearly half the course at St. Cyr, West Point is very deficient; nor does it equal St. Cyr in the study of military art, although in physics, fortification, and artillery it much exceeds it.

In field and permanent fortifications, construction, machinery, artillery, and the military art, the course at West Point is less extended than at Metz. In astronomy the course at West Point is at least equal to that of the school of the staff; while in field fortification, military art, and administration it is considerably less. In geodesy and topography but very little except the drawings of the latter is taught at West Point, but the Commission has recommended a programme of a course of instruction in which those subjects enter in as extended a form as can be admitted in a term of five years, though not as thorough as the course taught at the School of the Staff. Instruction in drawing at West Point is sufficient for the wants of an officer of any corps, although topographical drawing in the field is but little practiced, and the application of drawing in fortification is not nearly so extensive as at Metz.

At West Point there is much less practical application in the field of field fortification, siege work, batteries, and surveying than at Metz or the School of the Staff. It can scarcely be said there is any in geodesy, topography, and reconnaissance.

In tactics, manœuvres, riding, and infantry, cavalry, and artillery exercises, the cadets of West Point are certainly not less proficient than the students of St. Cyr, the School of the Staff, and the School of Metz. Two foreign languages are taught at West Point; one, in the French schools. Instruction in the English language, ethics, and law extends over three years at West Point. French literature forms part of the course in the two years at the Polytechnic, and military literature part of the course in the first year at St. Cyr, but there is no literary course at either Metz or the School of the Staff.

In the course of instruction recommended by the Commission for the United States Military Academy, the study of military art, history, and geography is increased; practical field application in engineering is extended; and that in geodesy, topography, and reconnaissance is introduced. Thus it is perceived that the United States Military Academy, receiving students with low qualifications, requires a year to bring them nearly to the standard of those that enter the French elementary military schools; that the instruction in the remaining four years combines the most essential parts of the courses of instruction at the two elementary schools and two schools of application of France, to which it will more nearly assimilate when the revised programme is adopted; that a less comprehensive course would not give the education required for the performance of the duties of an officer of our Army, who—it has been already shown—should, whatever his corps or arm, receive the instruction necessary to form the infantry, cavalry, artillery, engineer, and staff officer. It is likewise evident that to compress those studies into a shorter space of time is impracticable.

In many respects the United States Military Academy resembles the Polytechnic school. It receives alike the sons of the rich and poor, the sons of the distinguished and of the unknown. Its standard of scientific instruction is as high. It has the same powerful stimulus to exertion in the high reward it offers to successful effort, and in the penalty

which it exacts for neglect or incompetency. It has exercised a powerful influence upon the public schools and colleges of the country, has introduced among them new branches of study in mathematics, and has raised the character of their scientific teaching. It has led to the establishment of military schools in various parts of the country, which have assimilated their teaching and discipline as nearly as practicable to that of the West Point Academy. Nearly all the great public works of the country, the river and harbor works, the light-houses, and even the public buildings, have been directed by its graduates; they were the pioneers in the construction of railroads, and among the teachers of that art; and the great scientific works of the government have been chiefly conducted by them. The military services of its graduates have been even more conspicuous than those in engineering and science. The fortifications, the improvements in ordnance and small-arms, the conduct of the geographical and other scientific labors carried on in connection with the operations of troops, equally attest the character of the instruction imparted at West Point. Ever since the organization of the government, perpetual Indian warfare has kept the larger part of the Army in active operation on the frontier and in the barren plains and mountains of the interior. The duties are harassing, and entail great privation and exposure; they call for the exercise of all the best qualities of the soldier, which, tried by this severe test, the graduates have been found to possess in an eminent degree.

In the war with Mexico, where not only courage and conduct but extended and thorough professional knowledge and skill were requisite, the success of the campaigns has been attributed by the commanders chiefly to the high professional qualifications of the graduates of West Point. They were eminently distinguished in every operation of the war.

Having thus rather elaborately compared the course of instruction at the United States Military Academy with that of each of the military schools of France, which form the most perfect system of military education in Europe, and the pervading spirit of which accords well with our institutions, the examination into the systems of the other states of Europe will be more general and brief.

MILITARY EDUCATION IN ENGLAND.

Commissions in the British infantry and cavalry are obtained by purchase, except in the case of the few graduates from the military academy at Sandhurst.

Commissions in the artillery and engineers are obtained by graduation at the military academy at Woolwich.

"An education entitling a student to a commission in the infantry or cavalry is given in Sandhurst. Pupils are received at that college between the ages of thirteen and fifteen; they enter on the nomination of the governor; their instruction lasts either for two or four years, according as they are proficient in study or not; and, at the end of this period, if found qualified, they receive a commission without purchase. The usual number of cadets appears to be one hundred and eighty, for whom there are sixteen professors.

* * * * *

"There is also a senior department at Sandhurst, of which it appears that the original object, or, to use the words of Sir Howard Douglas, 'the special, distinct, and separate form,' was to be 'an establishment for training officers for the general staff.'

"This institution does not seem, at least recently, to have been regarded as a staff school, in the sense in which schools bearing the same name in France, Prussia, Austria, and Sardinia, educate for the staff corps. Since in these countries it is necessary that all officers on the *general staff* should have frequented for some years the staff school, whilst it appears that out of two hundred and sixteen officers who have received certificates at the senior department of Sandhurst since 1836, only fifteen were employed on the staff in May, 1854. Nor can it be doubted that both the importance and the education of the senior department, whatever may be the cause, have greatly diminished of late years; since, latterly, there has been only an attendance of nine or ten officers; whilst the whole instruction has been in the hands of two, indeed, it may always be said of one professor. The significance of this last fact may be estimated when we mention that for the staff school in France there are thirteen military and five civil professors.

"The education of the artillery and engineer service given at Woolwich was conducted until recently upon principles similar to those of the junior department at Sandhurst. A boy was nominated to a cadetship by the Master-General of the Ordnance, and was admitted to the academy, between fourteen and sixteen, on passing an entrance examination. He spent there a period varying from two to four years, according to his proficiency in obtaining theoretical instruction, and was then placed, for a year before receiving his commission, in a practical class at Woolwich. This system has recently been materially changed. Admission into the academy, since August, 1855, has been only attainable by success in an open competitive examination, the minimum age of candidates being seventeen.

"Immediately prior to the war (the late war with Russia) the cadets appointed to second lieutenancies in the artillery and engineers respectively joined the corps as young officers at Woolwich and Chatham, and went through the following courses:

"The young artillery officers were employed for a period of about six months under a director of artillery studies, whose duty it was to superintend and assist them in professional studies and pursuits; these comprised a course of reading and examination in military history and law, artillery, fortification, tactics, the modern languages, under proper masters, and the usual company duties, parades, artillery practice, &c.

"The young engineer officers were placed under instruction at the Royal Engineer Establishment for field instruction at Chatham for a period of about fifteen months. They went through a somewhat limited course of practical military engineering, including sapping, mining, and pontooning, a very limited course of architecture, and an extensive and practical application of the knowledge of surveying, which they had previously acquired at the Royal Military Academy.

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"In the case of Sandhurst and Woolwich the sons of officers of different rank obtain their education at rates of payment much lower than the sons of civilians. * * * * *

"We may add to this list of English military schools the East India Company's Military College, at Addiscombe, which * * * gives a professional education of two years to pupils of all arms in common; that the admittance is by nomination, and a *pass* entrance examination, not by competition; and that on leaving the school the pupils are chosen by the authorities of the company for the different services, according to their place in the final examination. The general order

of choice is one for the engineers, two for the artillery, three for the infantry.

"It should be added that both Sandhurst and Woolwich are practically self-supporting; a fact by no means contemplated on the foundation of either, and which has been the result of a gradual withdrawal of parliamentary grants, combined with a large accession of what may be termed highly-paying pupils, *i. e.*, the sons of civilians.

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"If military education is a subject of importance, it is surely worth supporting with the same care with which other great nations direct it. If, on the other hand, it is unimportant, it would be best (as some propose) to throw it aside entirely, and trust only to the education of public schools. In England we have hitherto acted upon *neither* plan. We have had an education for our officers costing the country little more than £1,300 yearly, and it has been carried on upon no uniform system or principle. We submit that such a course is indefensible upon any theory.

"Undoubtedly some persons may still deny that a military education is of any advantage; but we do not think it desirable to enter upon this question. The greatest military authorities might easily be quoted in favor of the value of a military education. And the inquiry we were directed to make is based upon the supposition that an officer will be assisted in the practice of his profession by having previously studied its principles."

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THE ROYAL MILITARY ACADEMY AT WOOLWICH.

"The subjects of examination for admission have not always remained the same, but have been changed from time to time. Those required at the beginning of 1855 were: English, mathematics, Latin, French, German, geography, history, drawing, and printing with the pen.

"The entrance examinations were conducted by the professors and masters belonging to the academy. * * * * *

"At the expiration of one year after the admission into the academy, the cadets were reported upon by a board of officers, and such of them as had not passed satisfactory periodical examinations in mathematics and fortification in the class-rooms were examined before this board by the professors of mathematics and fortification. This examination was called the probationary examination. The board was required to state their opinion, whether the progress and conduct of each cadet brought before them had been such as to entitle them to remain at the institution, or to assign the cause or grounds on which they recommended any cadet to be removed.

"The regulations limited the duration of the residence for the course of theoretical study to four years, at the close of which, those cadets who were found unqualified for commissions were required to leave the academy; but such cadets as qualified themselves at an earlier period have been permitted to obtain their commissions when they had done so.

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"The course of study was divided into two perfectly distinct parts, viz:

"I. The theoretical, limited to four years, and conducted mainly on the tutorial system, embraced mathematics, fortifications, descriptive geometry, history and geography, plan and landscape drawing, French, and German.

"11. The practical course of instruction, which has latterly been of one year's duration, not commencing until the theoretical had entirely finished, included practical artillery, surveying, field works, and lectures on machinery, astronomy, chemistry, geology, and mineralogy.

* * * * *

"The public examinations of the cadets proposed to be advanced to the practical class, or to be promoted from the practical class to commissioners in the artillery and engineers, generally took place at the same time, before a board of superior officers."

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The report states: "There appeared to us no reason whatever, why, with 'such alterations and improvements as may meet that progress of knowledge that time is constantly producing,' it should not be on an equality with any military school we have seen.

* * * * *

"There is, however, apparently some reason to believe that the results of the education at the Royal Military Academy have hitherto somewhat failed of that success which might have been hoped for, both as regards artillery and engineer officers.

"We do not find among the replies we have received from artillery officers any specific mention of deficiencies in the education of the young officers when they join the regiment at Woolwich; but it is unquestionable that serious complaints in this respect have been made of late years by some of the officers of this corps.

"In the case of the engineers, according to the evidence we have received, the attainments of the majority of young officers when they join at Chatham from Woolwich academy are not such as might have been expected. Either the instruction is not exactly what it should be—some break in its continuity occurs—some link is still wanting—or the mass of the young officers have not fully mastered the knowledge which has been imparted to them."

The causes of the want of success in the teaching of the academy are stated to have been the juvenile age of admission; the admission of cadets that did not possess the qualifications required by regulations, the regulations having been disregarded to meet the views of influential complainants; the want of proper severity in the probationary examination; the irregularity of the duration of the stay at Woolwich, some remaining two, others four years, to complete the same course of study; and, lastly, permitting cadets who were expelled from the academy for misconduct to return. The correction for these evils was manifest. Another source of the want of success was, in the opinion of the board, "the want of a properly-constituted body for representing the defects in the system of management and course of instruction at the academy formerly obliged the Master General of the Ordnance, from time to time, to appoint committees of inquiry, and in many instances these committees investigated the subject-matter of complaint, without the authorities at Woolwich academy being made aware, except by inference, of the objects of the inquiry.

"The remedy applied was almost as bad as the disease, as it was sometimes left uncertain whether the conduct of the authorities or that of the cadets was under investigation.

"The action of such committees is necessarily irregular, and can only refer to specific acts or to particular circumstances occurring at particular times; and it is essentially different in effect from the continued and sustained influence which the boards of improvement in foreign military

schools exercise on the system and course of instruction carried on in these establishments.

"Had any properly-constituted body been in existence, whose duty it would have been to have pointed out to the authorities the shortcomings of the Royal Military Academy, we consider that the preceding defects would long ere this have been completely remedied. The composition of such a body is, of course, of the greatest importance, so that, on the one hand, it should not be repeatedly trying experiments on the instruction at the academy, whilst, on the other, it should not be deterred from making representations which would prove advantageous to the service.

* * * * *

"We recommend the appointment of a board of improvement, consisting of the governor, the inspector of studies, the officer commanding the cadet company, the professors of mathematics and fortification, and the instructors in practical artillery and surveying, in addition to an officer belonging to each of the corps of artillery and engineers, to be appointed by the Secretary of War, to represent the wants of each service, as made apparent by any deficiencies in the instruction at the academy, exhibited by the young officers on joining at Woolwich and Chatham.

"This board to meet twice a year, immediately after the half-yearly examinations, under the presidency of the governor, or, in his absence, of the inspector of studies. Five members to form a quorum.

"The principal duty of this board will be to make recommendations relative to alterations in the programmes of the entrance examinations, and to suggest ameliorations in the course of studies to be followed in the academy."

The commissioners proposed that a more advanced age and higher qualifications for admission should be required.

"We think the subjects absolutely required for the entrance examination should be: 1. Mathematics, pure and mixed, as the groundwork on which the greater proportion of the scientific professional education is to rest. 2. The English language, literature, and history, and general geography. 3. The French language and history. 4. Drawing.

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"In addition to the preceding, in accordance with the principle we have stated, the candidates may, if they choose, select any two of the following subjects:

"Latin.	*	*	*	*	*
"Greek.	*	*	*	*	*
"German.	*	*	*	*	*
"Experimental sciences."	*	*	*	*	*

It was proposed that the duration of the course of instruction should be five terms of six months each, making two and a half years; that the first three should be entirely theoretical; the last two partly theoretical, and partly practical; that the teaching should be by lessons in the first part of the stay, and by lectures in the latter part.

It is not necessary to refer to the proposed change in the character of the examining boards.

The course of study proposed comprised—

Mathematics, pure and mixed.

German.

French.

Plan drawing.

Geometrical drawing.

Landscape drawing.
 Architectural and machine drawing.
 Descriptive geometry.
 Fortification.
 Military history and physical geography.
 Lectures on natural philosophy.
 Chemical lectures.
 Course of applied chemistry.
 Analytical chemistry.
 Practical artillery.
 Tactics of the three arms.
 Practical mechanics, machinery, and metallurgy.
 Surveying and field works.
 Lectures on geology and mineralogy.

It was proposed that the right of choice between the engineers and artillery should depend upon the merit of the graduate; and, as a further reward, that the four highest graduates should receive increased pay for five years, amounting to \$300 and \$200 per year.

Before being commissioned in the artillery, the young officer was placed for six months under the control of the director of studies at Woolwich, and entered upon a course of study comprising "military law (court-martial and mutiny act); military history, British and foreign; treatises on artillery; treatises on fortification; reconnoitering and out-post duty; field sketching, and use of instruments; military bridging; application of the three arms; strategy; battles and sieges; chemistry; mineralogy; military topography; military biography."

They were likewise "permitted to enter upon the usual company duties; and also, at stated times, to attend parades, artillery practice, riding schools, and those drills and exercises which were requisite to the due performance of their duties as officers, and which could be performed without trenching upon the hours of study."

At present there are under the director of artillery studies:

"Two captains of artillery, as first and second instructors in military exercises.

"The French and German masters (as heretofore, but giving a longer attendance).

"An instructor for surveying.

"An instructor for military drawing, &c.

"A lecturer on natural philosophy and mechanics."

In the opinion of the commissioners, however, "from the nature of the service, which we have before alluded to, we cannot but think that the young artillery officer would be most advantageously employed in obtaining practical field instruction with the men of the company to which he is attached immediately he is commissioned."

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"In addition to the practical field instruction with the men of their companies, as already alluded to, young artillery officers should be sent to the Royal Engineers Establishment at Chatham for three months, at the particular season of the year when the regular siege operations are being carried forward."

THE ROYAL ENGINEERS ESTABLISHMENT AT CHATHAM.

I. Nature of Instruction afforded to Young Officers.

"We have already mentioned the deficiencies in the scientific education of the young engineer officer, which are stated to exist when he

joins at Chatham, and it will be seen that the only instruction he afterwards receives, either in the purely military or civil branch of his profession, which is given immediately he obtains his commission, is not in any way calculated to enable him to supply these deficiencies, however desirous he may be of doing so.

"The course of instruction, which usually occupies about fifteen months, is comprehended under the heads of—

"1. Field duty.

"2. Scientific instruction.

"1. Under the first head are comprised some of those duties which are required of the military engineer in the field, such as sapping, mining, batteries of position, intrenchment; formation of military bridges for the passage of rivers by artillery, cavalry, and infantry; the formation of stockades and their destruction by gunpowder; subaqueous explosions, escalading, telegraphing, the use of the voltaic battery, and the diving bell.

"2. Under the second head, the officer, whilst employed upon the above duties, is also expected to devote a portion of his time to reading the best professional authors on military engineering; and, as a proof of his diligence, he is required, from time to time, to produce translations of the best examples of sieges, defenses, extracts of mining operations, &c., accompanied with neatly drawn plans, illustrative of the operations detailed; after which he is required to prepare projects, founded on the above elementary course of study, of the—

"Attack of fortresses;

"The demolition of revetments, bridges, &c.;

"The formation of military bridges; and

"The repair of bridges which have been destroyed;

"With memoirs on systems, and the projects of other officers or individuals which may be deemed worthy of investigation, with such other exercises of a similar character as the director of the establishment may consider to be necessary. To these are added a course of practical architecture, with a series of lectures on civil engineering, including the details of erecting and working a steam engine, which is practically explained on a small engine belonging to the establishment, the whole of the working parts of which are taken to pieces and put together again by the officer.

"A small laboratory affords the means of practicing such operations in analytical chemistry as are required of the engineers; and it also enables an officer to satisfy himself from actual investigation of the properties of the various building materials with which he may be working. Surveying, with military reconnoitering and practical astronomy, complete the course of study as detailed under the second head."

* * * * *

NATURE OF THE ENGINEER DUTIES.

"On quitting Chatham, the young officer is ordered to some foreign colony, or to some out-station in England, Ireland, or Scotland, where his duties are much more nearly allied to those of a civil than those of a military engineer."

The commissioners recommended that the establishment at Chatham "should be made thoroughly efficient for the practical application and the extension of the scientific knowledge which the young officers should have acquired at a military academy or college before they are provisionally commissioned."

* * * * *

"It also seems very desirable to have a board of improvement.

"It appears that the instruction at Chatham is mainly defective as regards the omission of the higher branches of military science, and that it requires regular courses of study in fortification and the attack and defense of places, architecture, (not merely building), construction, military art and history, tactics, and strategy. The study of the sciences of chemistry, metallurgy, geology, and mineralogy, and that of German and French, should also be continued."

"1. All young officers of engineers that proceed to Chatham for the purpose of receiving instruction of the Royal Engineer Establishment should only be *provisionally* commissioned.

"2. All of the same promotion should join at the same time, proceed through the same course of instruction, and finally be examined at its close to ascertain the extent to which they have benefited; and we should also recommend as an additional stimulus, as well as for the more convenient arrangement of the courses of instruction, that the honorable the Court of Directors of the East India Company should be invited to concur in an arrangement by which their young officers of engineers should join at the same time, and proceed through the same course of instruction.

"If the results of the examination, which should be conducted in the same manner, and on the same principles as we have already explained with regard to the examinations at the Royal Military Academy, prove that there has been gross inattention or gross idleness on the part of any of the young officers, the permanent commission might be altogether withheld, or be given under certain modifications in another arm of the service, as in France, Prussia, and Austria; but we think this course should not be resorted to, except on very strong grounds, and with the special sanction of the commander-in-chief.

"4. The final classification in the order of merit, which should determine the relative positions of the young officers in their corps, should depend partly on the marks obtained during this officer's examination, and partly on the marks awarded to the cadet at the Royal Military Academy; the marks obtained at the Academy being added to those awarded for the final examination at Chatham.

"5. This final classification for each promotion should also decide who are entitled to receive the *increased rates of pay* awarded to the engineers.

"6. The duration of the course would require to be extended to eighteen months, and this period should not be exceeded, except for illness.

"If the course of instruction at Chatham be reorganized in the manner we have ventured to recommend, we consider that all officers of engineers should, as a rule, be periodically permitted to attend this course of applied study and practical working, and thus have the opportunity of renewing their acquaintance with the ordinary military operations of war, and of keeping up their knowledge of scientific subjects bearing on their profession.

"We are of opinion that the studies which are necessary to young engineer officers should be followed by all, and nothing should be left optional or according to their particular wishes."

Remarks.—It will be observed that the changes proposed by the commissioners in the system of military education of England, tend to as-

simulate it to the French as nearly as the very different character of the people, the institutions, and the army, and its service will admit.

Although the condition of military education in England does not present itself as a model for our imitation, nor as a standard of comparison, yet it affords a valuable lesson. Our own Military Academy is open to evil influences of a similar kind to those which, at one time, at least, so seriously impaired the value of the English schools, by setting aside the regulations for admission, the standard of graduation, and the discipline of the Academy.

THE PRUSSIAN SYSTEM OF MILITARY EDUCATION.

Competition enters in a slight degree only into the system of military education in Prussia, the object being to secure a good average of general and professional education. The infantry and cavalry are officered chiefly by the appointment of aspirants or ensigns by the colonels of regiments. They must be between 17 and 18 years of age, and must pass an examination in their own language, in Latin, elementary mathematics, history, geography, French, and elementary drawing. After serving six months in the army the ensigns must pass nine months in a division school, studying the theory of arms, tactics, the rules and regulations of the army, field and permanent fortifications, and surveying and plan drawing. Upon passing an examination in these subjects, and receiving the assent of the officers of the regiment to his appointment in it, he is commissioned.

CADET SCHOOLS.

There are five cadet schools—four junior and one senior—which are chiefly designed for the education of the sons of officers of the army. Their organization and discipline are military; the instruction is not, with the single exception of the last year, at the senior school.

The age of entrance at the junior is from 10 to 11; the term of stay, four or five years. At the senior the age of entrance is from 15 to 16; the term of stay, three years. The mathematical and scientific studies of the senior cadet school were not carried so far as those of the gymnasiums of Prussia, schools which prepared youths for the university, and in which the course of studies is about the same as in colleges of this country. It was intended, however, to raise the standard of the general teaching in the senior cadet school to that of the gymnasium. In the last year the cadets of that school are taught—

- Mathematics;
- Tactics;
- Military literature;
- Military law and regulations;
- Artillery;
- Fortification;
- Plan drawing;
- Mental philosophy, or English;
- Chemistry;
- French; and
- German.

There are upwards of 420 cadets in the school, and about 100 in each class. At the end of two years only sixty of these one hundred are advanced to the highest class; the remaining forty (the lower part of the class) being sent to the army to earn their commissions in the manner of

other aspirants. Of the sixty that graduate, but one half (the upper part of the class) are commissioned as second lieutenants, the lower half receiving merely the appointments of ensigns. The latter, however, are promoted to the first vacancies without further examination.

SCHOOL OF ARTILLERISTS AND ENGINEERS.

There is an artillery and engineer school, to which the colonels in those arms appoint aspirants, as in the infantry and cavalry. They must pass the same kind of examination as the infantry aspirants, except in mathematics, in which the examination is more severe, and must serve nine months with troops. Then they join the artillery and engineer school, and at the end of a year, during which their studies are similar to those of the last year at the senior cadet school, upon passing the required examination, they receive a provisional appointment as sub-lieutenants.

During the last two years the instruction is in mathematics, mechanics, and physics, the art of war, military and civil engineering, artillery, tactics, geodesy, topography, the French language, general and special drawing, and the veterinary art. The studies are carried on during nine months of each of the three years, during which there are practical applications in the field, but these are chiefly made during the three months when the theoretical studies are suspended. At that time, also, the students visit the fortresses, armories, foundries, and other public establishments and manufactories of machinery. Cadets who have completed the whole term at the senior school may enter the artillery and engineer school as sub-lieutenants, to pass through the studies of the last two years.

Upon graduating, the sub-lieutenants are commissioned as lieutenants.

Remarks.—Thus it appears that, in Prussia, the requisites for admission to the engineer or artillery service are three years of instruction in higher mathematics, mechanics, and physics, and in professional subjects, superadded to the course of instruction usually given at the colleges of the United States.

THE STAFF SCHOOL AT BERLIN.

Appointment to the staff of the Prussian army is, with rare exceptions, only to be obtained through the staff or war school. There is no commission in the staff corps of less rank than that of a captaincy. Any officer of the army of three years' standing may be examined for admission to the staff school. The examination is made before commissioners at Berlin. There are usually sixty or seventy candidates, but of these only forty can be selected.

The term of study is three years. There are three classes of forty students each. The subjects of study are—

1. Tactics.
2. Artillery.
3. Fortification.
4. Veterinary art.
5. Higher mathematics and higher geodesy.
6. Geography.
7. Physical geography and geology.
8. Physics.
9. Logic.
10. History.

11. Military and political administration and economy.
12. Military jurisprudence.
13. History of war.
14. Art of sieges.
15. Staff duty.
16. French and Prussian.

Each year's course of study lasts eight months. The method of instruction is by lectures, the taking of notes, and the preparation of essays and memoirs.

There is no practical instruction during the study term, but at the end of the first year the officers are sent for three weeks to make surveys; at the end of the third year, to reconnoiter the frontiers, fortresses, &c.

During three months of each year they are sent to do military duty with arms of service or corps not their own.

There is a system of marks or credits and yearly examinations.

Of the forty who pass through the staff school each year, eight or ten only are sent to the topographical department of the staff. There they serve two or three years, when two are selected from the number and appointed captains in the staff. The remainder return to their regiments or corps, sometimes receiving appointments in the division schools.

AUSTRIAN SYSTEM OF MILITARY EDUCATION.

This has been entirely remodeled since the wars of 1848 and 1849.

There are schools of various orders for non-commissioned officers, containing nearly 6,000 pupils, chiefly the children of soldiers. The schools of the lowest order are entered at seven years of age. The boy reaches the highest school at about fifteen. There are twenty schools of the highest order. From each of those connected with the engineers, artillery, &c., six or ten of the best pupils are transferred to the engineer or artillery academies, through which they may gain a commission.

For the education of officers there are four cadet houses, each containing 200 pupils, who enter at eleven and leave at fifteen years of age. Of the 200 that annually leave these houses 100 enter the infantry and cavalry academy at Wiener-Neustadt; fifty enter the artillery academy, and fifty enter the engineer academy. The infantry and cavalry academy contains 400 students; the other two, each 200.

Only one in twenty or one in thirty of the officers of the Austrian infantry and cavalry enter from the academy of Wiener-Neustadt. This academy receives most of its pupils from the cadet schools. Those appointed to it who have not passed through those schools are examined in German writing, natural history, French history, geography, geometry, algebra, and plane trigonometry. The age of admission is from fifteen to sixteen years. The course of study lasts four years, during which they are taught four languages—French, Italian, Bohemian, and Hungarian—and receive a fair scientific and military education. The mode of teaching is a mixture of lessons and lectures. There is a system of credits, examinations, and merit rolls. The discipline is represented to be strict. In this, as in the other two military academies, the student who is habitually neglectful is sent to one of the non-commissioned officer schools. Choice of arms and of regiments is offered in the order of merit.

THE ARTILLERY ACADEMY.

Formerly, the officers of artillery were taken chiefly from the ranks. Young men of promise in the regimental schools were sent to a special school, where the chief study was mathematics, returned to their regiments, and in time were promoted to the rank of second lieutenant. Mixed with them at the school were a certain number of imperial cadets, who possessed privileges in regard to promotion. The present artillery academy is one of very recent establishment. Forty of the 200 pupils come from the highest order of non-commissioned officer schools. The course of study prescribed for the four years during which they remain at the academy comprises a good scientific and professional education. The method of instruction is by lessons and recitations, and by lectures. There is a system of credits, examinations, and merit rolls. Upon the satisfactory completion of the course of study they receive commissions as second lieutenants. After serving two years with their regiments it is intended that selection by examination shall be made from them of the most promising officers, who are to pass through a two years' course of higher instruction, in common with officers of engineers.

THE ENGINEER ACADEMY.

The engineer academy is an old establishment. In the number of students, course and method of instruction, system of credits, term of stay, examinations and promotions, it is the same, with the exception of the professional studies, as the artillery school. In this school, as in all the others in Austria, great improvements have been recently made. The studies are now high, the examinations strict, and the discipline good.

THE HIGHER SCHOOL FOR ENGINEERS AND ARTILLERISTS

Is to be composed of twenty officers from each corps, who have served two years with their regiments, and successfully competed for admission at an examination.

The course is to last two years, and to consist chiefly of applied mechanics, practical physics, construction of ordnance, and the art of war (which forms no part of the course at the artillery or engineer school), the use of artillery in the field and in attack and defense. Promotion from the rank of second to that of first lieutenant will depend upon the examination at the close of the course of study.

THE SCHOOL OF THE STAFF.

Admission to the staff of the Austrian army was always gained by a competitive examination.

The general staff consists of—

Twelve colonels.

Twelve lieutenant-colonels.

Twenty-four majors.

Eighty captains.

Within the last six years the school of the staff has been regularly established. It consists of thirty pupils, taken from all arms of the service, fifteen entering each year. The candidate must have served two years with his regiment, and be over twenty-one and under twenty-

six years of age. The competition for entrance is very active. The course is two years. The subjects of instruction are—

1. Military drawing and the study of ground and positions.
2. The higher tactics.
3. Staff duties.
4. French language and literature.
5. Riding.
6. Military geography.
7. Principles of strategy, illustrated by campaigns.

During four months of each year they do duty with troops of a different arm from that to which they belong. One month of the first year is devoted to surveying, and one month of the second to reconnaissance. Immediately after the final examination the students receive appointments in the staff corps, if there are vacancies, in the order of merit. If there are no vacancies, the student returns to his regiment until a vacancy occurs. If he is a second lieutenant, he is promoted to the rank of first lieutenant; if a first lieutenant, after three years' service, he is made a captain.

Remarks.—The present high condition of military education in Austria has been, apparently, brought about by the disclosure of great deficiencies in military knowledge in her military operations, within the last ten or twelve years. Promotion has been chiefly obtained by aristocratic or family influence. Professional knowledge has been looked down upon. The artillery, particularly, has been held in little estimation in the service, because of the class of men from which it has been principally officered. In the French service, on the contrary, there has been high regard for professional knowledge and merit, and promotion has been generally made irrespective of social or personal influence, and has been dependent on professional service and qualification.

RUSSIAN SCHOOLS.

But little information respecting the military schools of Russia has been collected.

1. There are twenty-two military colleges for the guards and line, containing more than seven thousand cadets.
2. One page corps of one hundred and sixty scholars.
3. One school of ensigns for the guards, with two hundred students.
4. One artillery school, with one hundred and twenty students.
5. One engineer school, with one hundred and twenty or one hundred and thirty students. Making an aggregate of over eight thousand military students.

There is, besides, an imperial staff school, into which twenty or twenty-five officers, possessing certain qualifications, enter each year, after an examination. The term of instruction is two years. The studies are chiefly—

- Topography, in its extended sense;
- The use of artillery in the field and in siege;
- General tactics;
- Strategy; and
- Military literature.

Upon graduation, the most distinguished scholar of each class is promoted at once to the staff as captain; the next two receive rewards of extra pay and medals. At the end of a year after leaving the school, all the graduates are attached to the staff, but are not at once promoted in it.

CONCLUSION.

So little information has been obtained concerning military education in Russia, that the comparisons made in the following remarks are not intended to apply to that nation.

It is seen from the preceding account of military education in Europe, that in Prussia all the officers of every arm receive a professional education, but that the standard of instruction for the infantry and cavalry and for the artillery and engineers is not so high as in France. That the proportion of officers of infantry and cavalry who have received a professional education is greater in France than in the other States of Europe (Prussia excepted), and that the French standard of scientific military instruction is the highest; that, for the duties of the staff, the standard of professional education is nearly equally high in all the States except England; that England is endeavoring to remedy the defects in the training of her officers in the scientific corps by the introduction of the stimulating principle of highly rewarded competition; that Austria is seeking to increase the attainments and raise the standard of professional knowledge of the officers of the line, the scientific corps, and the staff of her army by elevating the studies of her military schools and introducing the stimulus of competition; that in consideration of the condition of our country and the works of our service, and the peculiar circumstances that render it so important to impart the highest military education to the officers of our Army, the course of instruction proposed in the programme of studies, recommended by the Commission for adoption, is required for the United States Military Academy; and that any material reduction of subject or time would not only impair the usefulness of the graduate, but would bring the standard of our military education below that of all the great States of Europe; at a time, moreover, when, profiting by experience, they are endeavoring to elevate theirs.

III.

Record of the Commission appointed by act of Congress, June 21, 1860, to examine into the organization, &c., of the United States Military Academy.

Thirty-sixth Congress, first session. Chapter 163.

SECTION 8. *And be it further enacted*, That, upon the passage of this act, or as soon thereafter as practicable, a Commission shall be appointed, in the manner hereinafter designated, to consist of two Senators, two Members of the House of Representatives, and two officers of the Army, which Commission shall examine into the organization, system of discipline, and course of instruction of the United States Military Academy, with a view to ascertain what modifications or changes, if any, are desirable in order that the Academy shall best accomplish the objects of its establishment; that the said Commission shall report the result of its examination to the President of the Senate and Speaker of the House of Representatives; that the Commissioners from the Senate shall be appointed by the President of the Senate, those from the House of Representatives by the Speaker of the House, and those from the Army by the President of the United States.

* * * * *

SECTION 9. *And be it further enacted*, That the sum of fifteen hundred

dollars be, and the same is hereby, appropriated out of any money in the Treasury not otherwise appropriated, to defray the expenses of said Commission.

Approved, June 21, 1860.

IN SENATE OF THE UNITED STATES, *June 23, 1860.*

The President *pro tempore* announced the appointment of the Hon. JEFFERSON DAVIS and the Hon. SOLOMON FOOT, members of the Commission to examine into the organization, system of discipline, and course of instruction of the United States Military Academy, in pursuance of the eighth section of the act approved June 21, 1860, making appropriations for the support of the Army for the year ending the 30th of June, 1861.

Attest :

ASBURY DICKINS,

Secretary.

IN THE HOUSE OF REPRESENTATIVES, *June 23, 1860.*

The Speaker, in pursuance of the eighth section of the "act making appropriations for the support of the Army for the year ending the 30th of June, 1861," appointed Mr. H. WINTER DAVIS and Mr. JOHN COCHRANE commissioners on the part of the House of Representatives to examine into the organization, system of discipline, and course of instruction of the United States Military Academy, with a view to ascertain what modifications or changes, if any, are desirable in order that the Academy shall best accomplish the objects of its establishment.

Attest :

J. W. FORNEY, *Clerk.*

WAR DEPARTMENT, ADJUTANT-GENERAL'S OFFICE,

Washington, July 10, 1860.

Special Orders No. 136.]

By direction of the President, Major ROBERT ANDERSON, First Artillery, and Captain ANDREW A. HUMPHREYS, Corps of Topographical Engineers, are detailed from the Army members of the Commission created by the eighth section of the act of June 21, 1860, making appropriations for the support of the Army for the year ending June 30, 1861, to examine into the organization, system of discipline, and course of instruction of the United States Military Academy.

Major Anderson and Captain Humphreys will report at West Point for this duty on the 16th instant.

By order of the Secretary of War.

S. WILLIAMS,

Assistant Adjutant-General.

WAR DEPARTMENT, ADJUTANT-GENERAL'S OFFICE,

Washington, July 12, 1860.

Special Orders No. 138.]

At the request of the Commission created by the eighth section of the act of June 21, 1860, to examine into the organization, &c., of the United States Military Academy, First Lieutenant J. C. IVES, Topographical Engineers, is appointed secretary of the Commission, and will report to the Hon. Jefferson Davis, chairman of the same, for instructions.

By order of the Secretary of War.

W. A. NICHOLS,

Assistant Adjutant-General.

WEST POINT, N. Y., *July 17, 1860.*

The Commission instituted by the foregoing act of Congress and orders met at 10 a. m. to day.

Present—Hon. Jefferson Davis, Senator of the United States.

Major Robert Anderson, First Artillery.

Captain A. A. Humphreys, Topographical Engineers.

Absent—Hon. Solomon Foot, Senator of the United States.

Hon. H. Winter Davis, M. C.

Hon. John Cochrane, M. C.

First Lieutenant J. C. Ives, Topographical Engineers, secretary, present.

The act of Congress instituting the Commission and the letters of appointment and orders relating thereto were read. A letter was presented from the Hon. Mr. Cochrane, stating that it would be impossible for him to meet the Commission on the day proposed, and making inquiry in regard to the probable action of the Commission. The secretary was directed to notify Mr. Cochrane that the Commission had decided to proceed at once with their labors, and to ask his attendance at the earliest convenient day.

On account of the three members above named, the Commission then adjourned, to meet at 10 a. m. to-morrow.

J. C. IVES,

First Lieut., Top'l Eng'rs, Secretary.

WEST POINT, NEW YORK, *July 18, 1860.*

The Commission met at 10 a. m.

Present—Hon. Jefferson Davis, Senator of the United States.

Hon. Solomon Foot, Senator of the United States.

Hon. H. Winter Davis, M. C.

Major Robert Anderson, First Artillery.

Captain A. A. Humphreys, Topographical Engineers.

Absent—Hon. John Cochrane, M. C.

Lieutenant J. C. Ives, secretary, present.

The proceedings of yesterday were read. A motion was made by the Hon. Mr. Foot that Senator Davis be elected president of the Commission; which motion was unanimously adopted.

The secretary was directed to acquaint the Superintendent of the Academy that the Commission had assembled and completed its organization.

It was ordered by the Commission that the following questions should be submitted, in writing, to the Superintendent of the Academy, to the commandant of cadets, to the professors and instructors in the different departments, and to the senior assistants in cavalry, artillery, and infantry tactics, respectively :

QUESTIONS SUBMITTED BY THE UNITED STATES MILITARY ACADEMY COMMISSION TO THE SUPERINTENDENT OF THE ACADEMY.

1. Are there any modifications or changes in the organization of the academic staff, and in the manner of appointing the professors and assistant professors, that are, in your opinion, desirable ?

2. Are there any modifications or changes in the mode of conducting the annual examinations that are desirable ?

3. Are there any modifications or changes in the mode of appointing cadets, and in the qualifications for their admission, that are desirable ?

4. Are there any modifications or changes that are desirable in the mode of assigning graduated cadets to different corps in the Army?

5. Would it be, in your judgment, desirable to place the first or graduating class on a different footing as to restrictions, privileges, military duties, and emoluments from the rest of the corps, so that, during the last year at the Academy, they should be in a transition state from the warrant to the commissioned officer? State the advantages and disadvantages of such a modification, and give your views fully on each side of the proposition.

6. Are there any defects in the present system of discipline? If so, in what do they originate, and how should they be remedied?

7. Are there any changes in the regulations or administration of the Academy which would, in your opinion, conduce to the better preparation of the cadets, physically, morally, or intellectually, for the duties of officers of the Army? If so, state what they are.

8. Should the course of instruction now pursued at the Academy be enlarged in any of its departments; and, if so, in which and to what extent should it be enlarged? Should it be reduced in any of its departments; and, if so, in which and to what extent? Should any subjects not taught be introduced; and, if so, what are they and to what extent should they be pursued? Should practical training in any of the departments be extended; and, if so, in which and to what extent?

9. Is sufficient time allowed the cadet to become proficient in the course of study, theoretical as well as practical, laid down in the programme of instruction? If too much time is allowed, to what extent should it be curtailed? If too little, how much should it be extended, and what modifications would be introduced by the proposed reductions or extensions?

10. What modifications, if any, are desirable in the modes of instruction pursued in the different departments?

11. What modifications, if any, are desirable in the order of time in which instruction in the different departments is given, and in the subjects taught in those departments?

12. How many hours daily are apportioned to the cadets of each class during the different seasons of the year—

First. For study in each branch;

Second. For recitation and the section room in each branch;

Third. For practical application;

Fourth. For military exercises;

Fifth. For meals;

Sixth. For recreation;

For sleep?

13. Is there any indication of overwork or weariness of study among the cadets in the section rooms or examination halls?

14. Have you any modifications or changes to suggest not embraced in your answers to the foregoing questions respecting the organization, discipline, and course of instruction that would, in your opinion, conduce to the better accomplishment of the objects of the establishment of the United States Military Academy?

QUESTIONS SUBMITTED BY THE UNITED STATES MILITARY ACADEMY COMMISSION TO THE COMMANDANT OF CADETS.

1. Are there any modifications or changes in the organization of the academic staff, or in the appointment of the members thereof, which are, in your opinion, desirable? If so, state what they are and how they are to be effected.

2. Are there any modifications or changes in the mode of appointing cadets, and in the qualifications for admission to the Academy, which you deem desirable? If so, state what they are, and propose the modifications or changes which should, in your opinion, be made.

3. Are there any modifications or changes which you deem desirable in the mode of assigning graduated cadets to the different arms of the service?

4. Are there any modifications or changes in the discipline of the corps of cadets which you think should be made; and, if so, what are they?

5. Would it be, in your judgment, desirable to place the first or graduating class on a different footing as to restrictions, privileges, military duties, and emoluments, from the rest of the corps, so that during the last year at the Academy, the cadet should be in a transition state between the warrant and the commissioned officer? State the advantages or disadvantages of such a modification, and give your views fully on each side of the proposition.

6. What subjects are embraced in your course of instruction, and how are they taught?

7. Does the military instruction require any modification in either the elementary or practical course? If so, state what and how it is to be made.

8. Does the present course and term leave to the cadets an unnecessary amount of leisure, or is their labor, in your opinion, excessive? State such modifications as may, in your view, be desirable.

9. Are there any modifications or changes in the regulations or the administration of the Academy which would, in your opinion, conduce to the better preparation of the cadets, physically, morally, or intellectually, for the duties of officers of the Army? and, if so, state what they are.

10. Have you any modifications or changes to suggest not embraced in your answers to the foregoing questions respecting the organization, discipline, and course of instruction that would, in your opinion, conduce to the better accomplishment of the objects of the establishment of the United States Military Academy?

QUESTIONS SUBMITTED BY THE UNITED STATES MILITARY ACADEMY COMMISSION TO THE PROFESSORS AND INSTRUCTORS OF THE ACADEMY.

1. What subjects are taught in your department? State briefly the amount of instruction given in each.

2. Reference being had to the objects for which the Military Academy is established, should the teaching in any of these branches be extended; and, if so, in which and how far? Should it be curtailed in any way; and, if so, in which and to what extent?

3. What method of instruction is pursued in your department; and are there any modifications which would improve it?

4. What practical instruction is given in your department? Should this be extended or curtailed?

5. How many hours' study should the cadet give daily to be proficient in the course prescribed for your department; and to what extent would this be increased or curtailed by any modifications proposed by you?

6. How many hours' daily is each cadet occupied in recitation and in the section room in your department?

7. Is the amount of study in your department such as to overtax the

student, regard being had to the demands made upon him by the other departments at the same time? What modifications would the changes proposed by you introduce?

8. Is there any indication of overwork or of weariness of study among the cadets in any of the departments, in the recitation room or examination hall?

9. Have you any modifications or changes to suggest not embraced in your answers to the foregoing questions respecting the course of instruction that would, in your opinion, conduce to the better accomplishment of the objects of the establishment of the United States Military Academy?

QUESTIONS SUBMITTED BY THE UNITED STATES MILITARY ACADEMY
COMMISSION TO THE SENIOR ASSISTANTS IN CAVALRY, ARTILLERY,
AND INFANTRY TACTICS.

1. Reference being had to the objects for which the United States Military Academy is established, should the instruction in (cavalry, artillery, infantry) tactics be extended; and, if so, in what subject, and how far? Should it be curtailed; and, if so, how, and to what extent?

2. What method of instruction is pursued in your department, and are there any modifications which would improve it?

It was also ordered by the Commission that the subjoined letter should be sent to the following individuals:

Lient. Gen. Winfield Scott.

Brevet Brig. Gen. J. G. Totten, Corps of Engineers.

Brevet Brig. Gen. A. S. Johnston, Second Cavalry.

Brig. Gen. J. E. Johnston, Quartermaster-General.

Brevet Col. S. Thayer, Corps of Engineers.

Col. J. K. F. Mansfield, Inspector-General.

Brevet Col. C. A. Waite, Fifth Infantry.

Brevet Col. Robert E. Lee, Second Cavalry.

Brevet Col. Benjamin Huger, Ordnance Department.

Brevet Col. Justin Dimick, Second Artillery.

Brevet Col. Harvey Brown, Second Artillery.

Col. S. Cooper, Adjutant General.

Brevet Lient. Col. R. C. Buchanan, Fourth Infantry.

Brevet Lient. Col. W. H. Emory, First Cavalry.

Major T. H. Holmes, Eighth Infantry.

Major J. G. Barnard, Corps of Engineers.

Major Alfred Mordecai, Ordnance Department.

Major John F. Lee, Judge-Advocate.

Captain G. W. Cullum, Corps of Engineers.

Captain W. Maynadier, Ordnance Department.

Captain A. E. Shiras, Subsistence Department.

Captain M. C. Meigs, Corps of Engineers.

Captain H. G. Wright, Corps of Engineers.

Captain H. F. Clarke, Subsistence Department.

Captain W. B. Franklin, Corps of Topographical Engineers.

Staff of the Artillery School at Old Point Comfort.

Rt. Rev. Leonidas Polk.

Rt. Rev. Samuel McCroskey.

Gen. E. A. Hitchcock.

Col. George A. McCall.

Prof. Alexander D. Bache.

Prof. C. Crozet.

Prof. C. A. Davis.

Prof. Horace Webster.
 Hon. Charles Mason.
 Prof. Albert T. Bledsoe.
 G. W. Smith, esq.
 G. B. McClellan, esq.

U. S. MILITARY ACADEMY COMMISSION,
West Point, N. Y., July 18, 1860.

SIR: For the information of the Commission instituted by virtue of the eighth section of the act of Congress of June 21, 1860, making appropriations for the support of the Army, &c., to inquire into the organization, system of discipline, and course of instruction at the United States Military Academy, you are requested by the Commission to state what modifications or changes in the organization and course of instruction at the Academy are in your opinion desirable, to secure to the Army officers best qualified to perform their various duties, and to meet all their responsibilities.

Very respectfully, your obedient servant,

J. C. IVES,
First Lieut., Top. Eng's, Secretary.

A communication was received from the Superintendent announcing that a national salute would be fired in honor of the arrival of the Commission, and tendering a review of the corps of cadets and troops stationed at the post. The secretary was directed to notify the Superintendent that the Commission would be prepared to attend the review upon any day during the coming week.

An examination was then made of the programme of the course of instruction, &c., at present pursued at the Academy, and a portion of the proceedings of the Academic Board of the 4th and 7th of September, 1858, was read, after which the Commission, at 3 p. m., adjourned to meet at 10 a. m. to-morrow.

J. C. IVES, *First Lieut., Topographical Engineers,*
Secretary.

WEST POINT, N. Y., *July 19, 1860.*

The Commission met at 10 a. m. Present: All of the members excepting the Hon. Mr. Cochrane. The secretary present.

The proceedings of yesterday were read. The reading of the proceedings of the Academic Board of the 7th September, 1858, was concluded. The Commission then commenced the reading of the proceedings of a board to revise the programme of studies, &c., at the United States Military Academy, which convened at West Point, New York, on the 12th of January, 1860, and was dissolved, without completing its labors, on the 24th of April, 1860, by order of the Secretary of War.

At 3 p. m., the commission adjourned, to meet at 10 a. m., to-morrow.

J. C. IVES, *First Lieut. Topographical Engineers,*
Secretary.

WEST POINT, N. Y., *July 20, 1860.*

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read. A communication was received from Mr. Cochrane, acquainting the Commission that severe illness had prevented his attendance, but that he should, as early as possible, join the Commission in its labors.

At the request of the Commission the Superintendent of the Academy furnished a set of the text books used by the cadets, with a memorandum designating those portions of the text that are omitted from the course of study.

The Professor of Philosophy at the Academy asked leave to borrow, from the papers before the Commission, the replies made by him to certain questions of the revisory board; which replies he desired to consult before submitting answers to the questions proposed by the Commission. The leave was granted.

The reading of the proceedings of the revisory board was then completed.

Extracts relating to the United States Military Academy were then read from the American State Papers regarding military affairs: pp. 834-839, vol. 1, and pp. 80-83, vol. 2; and at 3 $\frac{1}{2}$ p. m., the Commission adjourned to meet at 10 a. m., to-morrow.

J. C. IVES, *First Lieut. Topographical Engineers,*
Secretary.

WEST POINT, NEW YORK,
July 21, 1860.

The Commission met at 10 a. m. Present, all the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

It was ordered by the Commission that questions similar to those proposed to the assistant instructors in cavalry, artillery, and infantry tactics, should be submitted to the instructor in the use of small arms, &c., at the Academy.

A communication was received from the Professor of Drawing in reply to the questions proposed to him by the Commission. (Appended, and marked A.) On motion, it was laid on the table for future examination and reference.

Extracts relating to the United States Military Academy were then read from the American State Papers, volume 2, pp. 83-85; pp. 380-382; pp. 663-664; pp. 75. 76.

On motion of the President, it was

Resolved, That the Superintendent be requested to furnish to the Commission a table exhibiting the proportion of the cadets who have graduated from the United States Military Academy to those who have entered during the four periods of ten years between 1820 and 1860.

It was ordered that the following questions should be submitted to the surgeon stationed at the post:

1. Reference being had to the objects for which the United States Military Academy is established, do you consider that the training at the Academy is well adapted to the physical development of the cadet? Have you observed any indications of mental or physical overwork, or of any injurious effects that appear to result from the course of instruc-

tion or discipline pursued? Have you any modifications or changes to suggest in the present system of training that would, in your opinion, be desirable?

2. Have you any modifications or changes to suggest in regard to the qualifications for admission to the United States Military Academy?

A portion of the report, made to the British Government in 1857, by the Commissioners on Military Education (pp. 8-23, and pp. 309-312) was then read; after which, at 3½ p. m., the Commission adjourned to meet at 10 a. m., on Monday.

J. C. IVES, *First Lieut. Topographical Engineers,*
Secretary.

WEST POINT, NEW YORK,
July 23, 1860.

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of Saturday were read.

It was ordered by the Commission that the subjoined letter should be sent to the following individuals:

Brevet Brigadier General A. S. Johnston, Second Cavalry.
Brevet Colonel S. Thayer, Corps of Engineers.
Colonel J. K. F. Mansfield, Inspector General.
Colonel S. Cooper, Adjutant General.
Colonel Richard Delafield, Superintendent Military Academy.
Brevet Lieutenant Colonel W. H. Emory, First Cavalry.
Professor H. L. Kendrick, Military Academy.
Captain G. W. Callum, Corps of Engineers.
Captain A. W. Whipple, Corps of Topographical Engineers.
Captain G. G. Meade, Corps of Topographical Engineers.
Staff of the Artillery School at Old Point Comfort.

UNITED STATES MILITARY ACADEMY COMMISSION,
West Point, New York, July 23, 1860.

SIR: For the information of the Commission, instituted by virtue of the eighth section of the act of Congress of June 21, 1860, making appropriations for the support of the Army, &c., to inquire into the organization, system of discipline, and course of instruction at the United States Military Academy, you are requested, at your earliest convenience, to transmit replies, in writing, to the following questions:

1. What modifications, if any, of the present mode of assigning cadets of the United States Military Academy to corps or arms would, in your opinion, be better adapted to the purpose of securing to each branch of the service the highest special qualifications, and, to the Army, the greatest general efficiency?

2. To what extent, if at all, would it be advisable, in your opinion, to require officers to serve in different corps or arms?

3. Do the graduates of the United States Military Academy, so far as you know or believe, generally pursue their professional studies after entering their respective corps; and can you suggest a method which would, in your opinion, further stimulate to professional improvement and the acquisition of useful information among the junior officers of the Army?

Very respectfully, your obedient servant.

J. C. IVES, *First Lieut. Top'l Eng.,*
Secretary.

The reading of extracts from the report of the English commissioners on military education was then continued: pp. 316-387, 343-347, 363-367, 381-393, 396-406, 351-353; and at 3 p. m. the Commission adjourned to meet at 10 a. m. to-morrow.

J. C. IVES, *First Lieut. Top'l Eng.*,
Secretary.

WEST POINT, NEW YORK,
July 24, 1860.

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

An invitation was received from the Superintendent for the Commission to assemble at 5½ p. m., in order to review the cadets and troops stationed at the post.

A communication was received from Captain G. W. Smith in reply to the question proposed in the circular letter of July 18. Captain Smith referred the Commission to a written statement, submitted by him to the previous board, as embracing, in the main, his views in regard to the subjects referred to. (Appended and marked B.)

The reading from the report of the English commissioners on military education was then resumed: pp. 127-133, 92-93, 58, 72-73, 3, 411-414, 405-406, 212-217.

A communication was received from the surgeon stationed at the post in reply to the questions proposed by the Commission on the 21st instant. On motion, it was laid on the table for future examination and reference. (Appended and marked C.)

An extract was read from the report of the select committee on Sandhurst Royal Military College: pp. 191-195.

The communication received on the 21st instant from the professor of drawing, containing the replies to the questions proposed by the Commission, was taken up and read. The secretary was directed to invite Professor Weir to attend at the next meeting of the Commission.

The communication from the surgeon stationed at the post was then taken up and read; and it was directed that Assistant Surgeon John Campbell should be invited to attend the next meeting; after which, at 3 p. m., the Commission adjourned to meet at 10 a. m., to-morrow.

J. C. IVES, *First Lieut. Top'l Eng.*,
Secretary.

WEST POINT, NEW YORK,
July 25, 1860.

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

Professor WEIR being present, in reply to questions proposed to him by the Commission, made statements regarding his department, which he subsequently embodied in Appendix A.

A communication was received from Major T. H. Holmes, Eighth Infantry, and read. (Appended and marked D.)

A communication was received and read from First Lieutenant J. C. Duane, Corps of Engineers. (Appended and marked E.)

Lieutenant DUANE was called, and in reply to questions proposed by the Commission, stated that—

He had seen among the cadets, in the examination halls, no evidence of overwork or weariness of study; that there had not been time to judge of the effect of a five years' course of instruction at the Academy; that the last graduating class, the only class that had remained at West Point five years, had expected to graduate at the end of their fourth year, and were so much disappointed and dissatisfied at the additional years' detention, that they could not be considered as presenting a fair example of the effects of a lengthened term.

He has scarcely time to instruct cadets thoroughly in field engineering, reconnaissance, &c., and would recommend taking cadets of the first class into the field for a week or more at a time, in order to give them practice in those duties, provided it could be done without interfering with the necessary details for infantry, artillery, or other drills. As regards the system of discipline, has had no opportunities of forming a judgment.

First Lieutenant J. B. HOLABIRD, First Infantry, adjutant of the post, was called, and in reply to questions proposed by the Commission, stated as follows:

It would be better if all graduates could be made to serve two years or more before being assigned to special corps. The Academic Board cannot judge entirely of qualifications possessed by graduates, nor of those required by the nature of the service, and they recommend assignments to corps on general merit without reference to special fitness or special acquirements. A separate examination some time after graduating might tend to stimulate to study and to a zealous performance of duty, and to remove the impression that class standing at the Academy determines forever the position in the Army and in life. On account of such impressions all inducement to study is gone when the position is once attained.

The studies are not followed up by graduates from various causes—one, the absence of all stimulus; also, the nature of their duties, the jealousy and sneers of old and incapable officers, &c. Examination for promotion would be the greatest incentive to study and individual effort, and perhaps the best method which could be adopted. The bestowal of staff appointments, after a careful examination, would tend to cause professional studies to be pursued after graduating and entering the service. Special acquirements, intellectual attainments, practical knowledge, soldierly qualities, professional zeal and accomplishments, should all be considered in giving such appointments.

Regarding the discipline of cadets, the system of writing excuses leads to indirect statements, or a tendency to prevaricate; a hiding or keeping back a part of the truth; and a departure from that candor and frankness the characteristic of a soldier.

I do not think enough importance is attached to the study or standing in the several branches of tactics. These are not taught sufficiently. It seems to me that more time should be given; the theory and objects of the movements more fully explained. Other matters might be abridged, and those more essential to the officer and soldier substituted. The exclusion of conduct-marks from standing would take away the chief motives to good behavior. The system of *immediate rewards* for getting no demerit has had an admirable effect; and perhaps this might be carried further, by allowing standing in conduct to have more weight

in the appointment of cadet officers, by keeping cadets back at the post after graduating, and by many other methods which might suggest themselves.

First Lieutenant R. WILLIAMS, First Dragoons, assistant instructor of cavalry, was called, and in reply to questions proposed by the Commission, stated as follows:

From what I have observed in the assignments to my own arm of service, I think it would be better to take the special acquirements and aptitude of each cadet into consideration, and I think officers who have charge of practical military instruction are better fitted to judge of special qualifications of cadets than the professors. It would not seem to me advisable to require officers to serve in different corps or arms, because there are so few incentives to exertion that officers do not even perfect themselves in *one* corps or arm. I think the assignment should be made immediately at graduation, because we have no school of practice for other than the artillery service.

I do not think that officers devote much attention to study of professions after graduating. Were the troops concentrated at large posts it might encourage an *esprit du corps* and a spirit of emulation. Could regimental or other schools of practice be instituted, and examinations for promotion be held, it would give opportunities and motives for study. I would carry the examinations for promotion as high as a colonelcy.

I think the present system of discipline at the Academy, on the whole, about the best that could be adopted. I think it would be found advantageous if a cadet guilty of grossly unmilitary or ungentelemanly conduct could be at once dismissed. At present the punishments are not in due proportion to the rewards. In every case needing punishment the latter should be as prompt as possible.

The Commission here adjourned at 4 p. m., to meet at 10 a. m. tomorrow.

J. C. IVES, *First Lieut. Top'l Eng'rs,*
Secretary.

WEST POINT, NEW YORK, *July 26, 1860.*

The Commission met at 10 a. m.

Present, all of the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

Communications were received, in reply to the circular letter of July 18, from General Scott, Colonel Mansfield, Colonel Huger, Captain Maynadier, and Professor Bartlett, which, on motion, were laid on the table for future examination and reference. (Appended and marked, respectively, F, G, H, I, and K.)

First Lieutenant R. WILLIAMS, First Dragoons, was recalled, and, in reply to questions proposed by the Commission, stated as follows:

When a cadet is reported for any delinquency, he renders, if he pleases, a verbal excuse to the commandant. If this does not elucidate the matter, he is allowed to present an excuse in writing, which is referred to the reporting officer for his recommendation and statement in the case. In many cases the matter is laid before the Superintendent. There is no obligation upon a cadet to write an excuse at all. In regard to questions of fact, the word of the cadet is considered sufficient, unless the statement of the reporting officer comes in conflict with it.

The system pursued is to place entire confidence in a cadet, unless he has shown himself unworthy of it. In cases of positive prevarication or untruth, charges are preferred against the delinquent. Unless there are *strong* grounds for suspicion that a cadet's statement is incorrect, nothing is said to him or to others upon the subject.

I consider the present system of making cadet officers a good one. I do not think the first class would be willing to serve as non-commissioned officers; and being unwilling, they would not do their duty well. No difficulties arise from orders being given by non-commissioned officers of the lower classes to privates of the higher classes. The cadet officers are selected for good conduct and soldierlike qualities. I think it better that the positions of commissioned officers in the cadet companies should be filled by cadets. It improves the discipline, and instructs the cadets in the duties of officers.

I think that the signing by the officer of the day of a certificate that he has reported all observed violations of regulations has a good effect. The cadets know that the officer of the day is bound in honor to report them for delinquent conduct, and have no feelings of ill-will in consequence of such reports. He is not expected to report what takes place in his own room. I do not think the form of the certificate is objectionable. I believe that all of the cadets consider it sacredly binding upon them.

I instruct a class in the theory of strategy and grand tactics. The text book used is Jomini's Art of War. The course was commenced last January. It embraces a discussion of the principles of tactics and strategy, with practical illustrations and applications by the instructor. The cadets manifest great interest in it. The time now allowed permits little more than the learning of principles. The Instructor cannot give as many examples from history, nor illustrate them as fully as is desirable. The cadets are encouraged to ask whatever questions may suggest themselves.

Changes have been made during the past few years in respect to the discipline in the first class. The effort has been to place that class upon a higher footing than the other cadets. I think the system of extending cadet limits for good behavior has had excellent results, but should not at present be carried further. There has been a very bad effect produced upon discipline by cadets who have been dismissed for bad conduct or deficiency in studies being sent back by executive authority. This renders cadets careless and indifferent in regard to both conduct and study. To turn back cadets into a lower class does not, in my opinion, if done judiciously, exercise a *very* bad influence; though, by dismissing the cadet of inferior qualifications, and getting a superior man, the government would be the gainer.

Captain J. H. SIMPSON, Topographical Engineer, being present, in reply to questions proposed by the Commission, stated as follows:

My experience shows that the Academy has been defective in preparing officers for the duties of my corps, particularly in the use of field astronomical instruments, more especially the sextant and transit, which are principally relied on for the determination of time or longitude, and of latitude on extended explorations. The officers of the line are only considered as competent for the duties of a good drill officer after four or five years of continual practice in the various arms and movements of the service, while the officers of Topographical Engineers graduate and are not unfrequently sent out upon reconnaissances and surveys, and instruments for the first time put into their hands, of the

practical handling of which they know little or nothing; and the consequence has been that only after one or more explorations have they found themselves competent for their duties. The result of all this has been loss to the government in money and opportunity for the determination of important geographical knowledge, and the officer cannot be said to have been in fault, but must lay the blame, if any, upon the Academy, which has thus sent him forth defective in the practical use of the instruments he is to handle. Such has been my experience, and the reports of other officers, I think, will point to the same conclusion.

My advice is, therefore, that at least two months of the cadet's time should be devoted exclusively to the practical use in the field of the instruments which are used by topographical engineers in explorations and surveys, such as the sextant and astronomical transit, barometer, magnetometer, dip circle, theodolite, compass, and level, and the obtaining of reliable results from well-observed data and mathematical computation. There should be instruction in geodetic as well as topographical surveys and reconnaissances, and in the practical methods resorted to in the field in carrying on those works. At the same time a thorough knowledge of topographical drawing is of the first importance. Its acquisition should occupy a very considerable portion of the time that is devoted to drawing. In my opinion the order of instruction in this branch should be—

1st. Elementary studies in form, with crayon, lead pencil, and brush.
2d. Shading of forms with crayon, lead pencil, and brush. 3d. Sketching from models and nature in pencil and colors. 4th. Topographical drawing.

Lieutenant A. M. M. COOK, Third Infantry, assistant instructor in infantry tactics, was called, and, in reply to questions proposed by the Commission, stated as follows:

I think that officers of all staff corps of the Army should serve one year in each arm, before being assigned to their corps. I would then assign them to corps according to the recommendations of the Academic Board, not allowing any one to enter a staff corps who had not been so recommended when he graduated.

In the line I would assign them to corps, and have them examined a year after graduation, and place them in the corps in order of merit. I would also have an examination before promotion in the subsequent grades. I would also recommend that no one should be put in the mounted corps who is not a good horseman. I would recommend concentration of troops, or special schools of practice.

I do not think the Academic Board should have the power of recommending graduates of the Academy to corps of the line.

I have never known, during my eight years' service, of a single instance of an officer studying theoretically his profession (when away from West Point) after graduating. They are usually scattered by single companies, and if concentrated are in the field on campaigns in pursuit of Indians, and, in consequence, cannot have recourse to books.

I have never known grand guards to be established, or evolutions of the line practiced in the service. I have required non-commissioned officers to recite to me, but have never, myself, made a recitation.

I know of few changes in the discipline of the corps of cadets that would be advantageous. I think those regulations should be abolished which cannot be enforced; that respecting the use of tobacco, for example. I think the tone and discipline of the corps is now high.

The sentences of courts-martial should be carried into effect, and the

Superintendent should have power, in extreme cases, to dismiss a cadet without trial.

I do not think cadets are overworked. The rewards for good conduct, the extension of limits, and the appointment of cadet officers, have an excellent effect upon discipline. The cadet appointments are given by the commandant, with the approval of the Superintendent, upon the recommendation of the instructors of tactics. I do not think it would be advantageous to have Army officers in place of cadet commissioned officers. Classes should be required to live together. When cadets of different classes room together they interfere with each other's studies. There is no difficulty occasioned by non-commissioned cadet officers of the lower classes having a certain authority over first-class privates.

The accommodations are not sufficient for the number of cadets. There *may* be 293 cadets at the Academy. There are rooms for only 262. The Army officers may be compelled to move out of barracks, and it is very necessary for discipline that the instructors of tactics should be quartered with the cadets.

There is too much battalion and not enough skirmish drill. I would recommend the entire month of October for the latter.

A communication was received and read from First Lieutenant R. J. Dodge, Eighth Infantry, assistant instructor of infantry tactics. (Appended and marked L.)

Lieutenant DODGE was called, and, in reply to questions proposed by the Commission, stated as follows:

The instruction in the schools of the soldier, company and battalion, is by Hardee's Tactics. The course of instruction as taught in the section room consists of the two volumes of Hardee's Tactics, and the third volume of Scott's Tactics. The effect of the new system of instruction, as taught in Hardee, is nearly to double the efficiency of the troops so taught. The celerity of movement, the facility of diminishing distances by moving on the shortest lines, and the rapidity with which changes from column to line, and the reverse, can be made without halting, enable a body of troops to multiply itself on the field of battle.

I think the present system of assignment to corps as good as can be devised, provided the cadets be allowed, to a great extent, to select their own corps from among those to which they have been recommended. If a cadet has a great desire to enter a particular corps or arm of the service, he is much more likely to make a good and efficient officer of that arm than if he were forced into one for which he had, possibly, no liking whatever. I would give them choice, according to the recommendation of the Academic Board, each assistant instructor of tactics having a vote, and according to class rank. I think each graduate should serve only in a single corps. The theoretical and practical instruction that each cadet receives in all arms of service during a five years' course at West Point is, I think, sufficient. All his time after graduation will be required to make him a perfect officer in the particular arm to which he has devoted himself.

I do not think all cadets should study the whole course of engineering as pursued at the Academy. There are minor details of permanent fortification, which I think could be omitted with advantage by all but the first section.

The academic course should be almost a unit, taught equally to all

the cadets. Special schools for instruction and practice for each arm would, I believe, conduce greatly to the efficiency of the Army.

I can suggest no changes in the academic regulations. To keep the sense of honor and tone of the corps at the highest standard, I think it necessary that a law be framed (if possible) that any cadet found guilty, before a court-martial, of dishonorable conduct, shall be irrevocably dismissed.

The discipline of the corps has been sensibly impaired by reinstatements of cadets recommended by the Academic Board for dismissal, on account of deficiency in studies and in conduct.

In regard to the certificates appended to reports of cadets, I consider them unnecessary and injurious. Strictly conscientious men will perform their duty without the certificate, while those not so conscientious soon become less so, and learn to look upon a certificate as a mere matter of form.

I consider the order from the War Department, prohibiting the counting of demerits against cadets, except for violations of existing regulations, injurious to discipline. Regulations cannot possibly cover all offenses.

Authority should be given to the Superintendent, in certain extreme cases, to dismiss peremptorily.

As a general rule I do not think that officers pursue their professional studies after graduating. They are sent to small isolated posts on our frontiers, where there are no facilities for study, and especially on the Indian frontier. Each is changed from one post to another so frequently and so suddenly, that even when he has succeeded in collecting a few books, he may at any time be obliged to abandon them.

As a means of exciting emulation in the Army, and opening a door to healthy ambition, I recommend that every promotion be preceded by a rigid examination. In case of a vacancy in any grade, if the senior officer of the grade below cannot pass satisfactorily the examination, let the vacancy be filled by the next officer below him who can pass. The examining board should be permanent and independent.

There is now in the Army no incentive to exertion and study beyond the personal satisfaction each officer must feel who has a consciousness of having done his duty. The careless and ignorant officer is promoted, in his turn, with as much certainty as the accomplished and conscientious one.

The Commission here adjourned to meet at 10 a. m. to-morrow.

WEST POINT, N. Y., *July 27, 1860.*

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

The communications received yesterday from General Scott, Colonel Mansfield, Colonel Huger, Captain Maynadier, and Professor Bartlett were also read.

Major T. H. HOLMES, Eighth Infantry, being present, in reply to questions proposed by the Commission, stated as follows :

The tactics of the different arms are so dissimilar that I should not consider that an officer of one arm could handle well troops of other arms. I do not think that graduates should serve in different arms. They can learn the service of only one well. An officer should understand not only the manipulations but the philosophy of movements, and

this requires much study. If commanding troops of different arms, professional pride would enable him to acquire the necessary information.

The practical instruction I recommended should be principally in the field.

The opportunities for study at many military posts are good. There were tolerable libraries at many of the frontier stations, until the regulation was made breaking up the post fund, by which the books were purchased. There has been no inconvenience from sending officers of infantry to the Academy. The infantry would be glad to furnish its quota of officers, which it has not, by any means, been permitted to do.

I think there should be a school of practice for infantry. One could be established at Fort Columbus with little expense. A cavalry school might also be established at Carlisle Barracks. One year of practical and theoretical instruction would be sufficient.

Either during the fifth year, or after graduating, practical instruction should be given in the method of making out accounts. This would save much trouble to officers of the Army.

Brevet Second Lieutenant HORACE PORTER, Ordnance Department, a graduate of the present year, was called; and, in reply to questions proposed by the Commission, stated as follows:

I think, as regards the academic course, that too much time is devoted to the study of moral science. By reading the book twice, one can acquire all of the ideas, and that is sufficient. It is now studied every other day for four months. The course in heavy artillery is, I think, too short. In the course of surveying we practiced, on two occasions, in the field, with each instrument. In astronomy, every cadet had an opportunity to take one observation with each instrument.

The state of discipline in the corps depends principally upon the character of the commandant and instructors of tactics. While I have been at the Academy the discipline has been well maintained. The system of cadet officers—officers of the day, of the guard, and superintendents of subdivisions—signing certificates in regard to the performance of their duties, is decidedly pernicious. After a period of time, the certificates are not regarded strictly. The appeal should be made to a cadet's sense of military duty, and a question of honor should not be involved in a matter of slight importance.

The regulations in regard to smoking are bad. The permission to smoke allows cadets to use tobacco only in places where, in winter, it is almost impossible to go. It would be well to have a separate smoking room for each class, to which they could repair in hours of relaxation.

I think the practice should be abandoned, among officers, of ever reporting a cadet upon suspicion. This would raise the tone of the corps. When a question of fact arises, and there is a contradiction between the statements of the officer and cadet, although the cadet asserts positively that the officer is mistaken, and is himself in a position to know positively, while the officer is not, the report, nevertheless, is allowed to stand against him. I think this is wrong. The report should be taken off, or an investigation should be had before a court. When the officer of the day signs a certificate that he has performed his duty, he is sometimes reported, notwithstanding, for neglect of duty, and the report stands against him. It should either be removed, or there should be an investigation. As to a certificate shielding a cadet from the ill-will of those whom he has reported, it does have that effect, to a certain extent; but, at the same time, the first sergeants, who have to give more

reports than any other cadet officers, do so without having to sign certificates, and the practice does not occasion trouble. They report, also, as conscientiously without the certificates, as the other officers with them.

I do not think that the military exercises interfere with the academic studies. That would depend much, however, upon the constitution of the individual.

The practice of restoring cadets to the Academy who have been dismissed has had a very bad effect upon the discipline and application to study.

A recess of half an hour was taken, during which the Commission visited and examined the cadet mess-hall and building. Upon reassembling, Brevet Second Lieutenant W. W. MCCREERY, artillery, a graduate of the present year, was called, and, in reply to the questions proposed by the Commission, stated as follows :

In regard to the studies pursued at the Academy, I consider the ethical course too laborious, and the History of Philosophy by Zenneman an unnecessary study, and unsuitable to this institution. I think the book on prefixes and suffixes is not adapted to the institution. I would not recommend the study of practical ethics or moral science; too much time certainly is devoted to the latter. I think that Bullion's Analytical Grammar, which was formerly studied, is better suited than Fowler's, the grammar now adopted. More instruction in heavy artillery should be given; also, more time should be devoted to practical instruction, to the use of astronomical and surveying instruments, &c. In this the course is now deficient. I do not think that the military exercises at present interfere with the academic duties.

There is an inconsistency about the system of demerits. Sometimes a cadet will be severely punished, suspended, or dismissed, for a certain number of demerits, and others who get many more will have them removed. The recent order is not advantageous to discipline which directs that no demerit shall count which cannot be classed under special regulations.

To insure a high tone, the cadets should have more confidence placed in them. Some men may be deficient in a sense of honor, but the supposition should be that they are gentlemen till they have proved themselves otherwise. The cadets themselves would frown down any attempts to deceive officers if confidence were placed in them.

The system of certificates is bad. Appeal should be made to military spirit and sense of duty. It is similar to a multiplication of oaths, and I think the tendency will be that cadets will learn to look upon a certificate as a formality, and not as a matter of moral obligation.

The system of reports and excuses is, I think, a proper one; but excuses should not be received a long time after the report is given. Where there is a discrepancy between the statements of the reporting officer and the cadet reported, it is too often the case that there is no decisive investigation made, and that the matter is not properly settled.

I am opposed to a five years' course. It is wearisome. The cadets are subject to the same strict discipline until the last day before they leave. The object of education is to train the mind properly, and I think the four years' course did that as well as the present. Spanish, which is very necessary, was not formerly studied in that course, nor enough of general history. Military history I do not think could be studied properly in a mere course of academic training.

There should be a school of practice for every corps—certainly for

each corps of the line. To elevate the position of the highest class in a five years' term and diminish the restrictions would relieve the irksomeness of the course, but would injure the discipline.

I think that staff officers should have more service with troops. If practicable, officers should be allowed to serve with all arms. This would enable them better to understand the combinations.

Brevet Second Lieutenant J. A. TARDY, corps of engineers, a graduate of the present year, was then called, and, in reply to questions proposed by the Commission, stated as follows:

The ethical course is too long, and too much time is devoted to moral science. It is ridiculed by the cadets, and becomes an unprofitable study. A man compelled to go through the present course would never open a book on moral science again. The amount of instruction in grand tactics and strategy should be increased. This branch is important, and in the short time that it is now studied more is learned about the military profession than in any other equal portion of the course.

There should be more instruction in practical engineering, in the methods of conducting a siege, and reconnoissances, in topographical drawing from nature, in practical astronomy, the use of astronomical instruments, &c. There is no instruction in the practical methods resorted to in surveying; but I think enough of the theory is taught to enable a person to work out such methods by himself.

When a cadet is reported, and says the report is a mistake, it should be at once removed. This is not now the case. The feeling in the corps would sustain such a system. It has a bad effect to place no confidence in a cadet. The latter will now sometimes get around a report without exactly telling a falsehood. If placed upon his honor and trusted, it would not be so.

The system of restoring dismissed cadets has a very bad effect upon the discipline.

The cadets are permitted to smoke, but there is no proper place for them to do so. They would smoke less in their quarters if not prohibited.

The fare is very bad. I have lived on bread for days, rather than eat the other food provided. The materials are bad and badly cooked.

I do not think the military exercises interfere at all with the studies. A cadet studies better after riding or fencing. There is no use, however, in the prolonged Sunday tour of guard duty. These tours, given as a punishment, lower the cadet's idea of the duties of sentinel.

Requiring certificates from cadet officers is useless. Cadets think nothing of them. They become a matter of form. It is better to trust to a cadet's sense of duty. The cadet officers should not be selected for their standing, but for their military qualities. The present system of making non-commissioned officers is good. Corporals and sergeants do not, however, exert much authority over first-class men. I think the latter should be isolated from the rest of the corps, and detailed in turn for commissioned officers' duties.

The last year's course should be practical, though I do not think that, at the end of three years, the cadets would be prepared for a course of application. The entering qualifications might perhaps be made higher, and include more arithmetic, and a certain amount of algebra and plane geometry.

The library should be thrown open to cadets for the withdrawal of books. Now they are allowed to take out but a single volume, and that from Saturday noon till Monday morning. The consequence is, that, not

having access to books from the library, they read a miserable description of literature.

The commission here adjourned, at 4.30 p. m., to meet at 10 a. m. on Monday next.

J. C. IVES, *First Lieut. Topographical Engineers,*
Secretary.

WEST POINT, N. Y., July 30, 1860.

The Commission met at 10 a. m. Present: All the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

Communications were received and read, in reply to the questions proposed in the circular letter of July 18, from General J. E. Johnston, Quartermaster General; Colonel Harvey Brown, second artillery; Major J. F. Lee, judge advocate; and Captain A. E. Shiras, subsistence department. (Appended and marked M, O, P, and R.)

A communication was received and read from Colonel J. K. F. Mausfield, Inspector-General, in reply to the questions proposed in the circular letter of July 23. (Appended and marked N.)

A table was submitted from the Superintendent, exhibiting the proportion of the cadets who have graduated from the Academy to those who have entered during the four periods of ten years between 1820 and 1860. (Appended and marked S.)

Brevet Second Lieutenant W. H. GIBBES, second cavalry, a graduate of the present year, was called; and, in reply to questions proposed by the Commission, stated as follows:

I have little to say regarding the course of instruction, as so many changes have taken place during the past few years in the course of study and the text books. As regards the practical instruction, I disapprove of the present mode of changing instructors every season in artillery. It occasions a looseness in the instruction. I think there should be two instructors in practical artillery stationed here for their term of four years.

In respect to discipline, there has been an order not allowing cadets to be reported except for violations of stated regulations. This order I consider an injudicious one, as the regulations cannot cover all cases for which a delinquent should be punished.

I do not think there can be devised a sufficient substitute for the demerit system. Cadets who exceed the number of demerit which the regulations allow, should be dismissed, and not permitted to return. The recent practice to the contrary has injured the discipline.

Cadets are not now treated with sufficient confidence. They ought to be, but are not, regarded as honorable gentlemen. When a report is positively denied, the denial should be considered sufficient, or an investigation should be made. In this respect, I think that many abuses have occurred.

The certificate system is bad. I can see no advantage whatever in it, but many disadvantages. A cadet would have a feeling of pride in performing his duties without a certificate, which he has not now.

Cadets should be taught by their instructors, while passing over the theoretical course, what will be the practical value of their acquisitions. A portion of the course they will now sometimes neglect, thinking that it will do them no good. This is especially the case with the mathe-

mathematical studies. I do not think the use of astronomical instruments is sufficiently explained.

The fourth class has too little to do, in proportion to what is done by the other classes. A portion of the first class year, while the problems are being drawn, might be devoted to learning the use of instruments, to instruction in the practical duties of reconnaissances, and in practical geology. Too much time is now devoted to ethics, particularly to moral science. One month, instead of four, would be sufficient time to devote to the latter. Scarcely enough of history is taught.

Brevet Second Lieutenant J. D. RAMSEUR, Third Artillery, a graduate of the present year, was called, and, in reply to questions proposed by the Commission, stated as follows:

As regards the theoretical course of instruction, I think too little time has been given to artillery tactics. The ethical course is too long, particularly the study of moral science is unnecessarily extended. This whole subject is ridiculed, and should not be taught in the section-room.

As regards the practical course, I think more time is devoted to infantry drills, proportionally, than is accorded at present to instruction in other arms.

The discipline has been much injured by cadets not being dismissed after getting the number of demerits to which the regulations restrict them. They are now careless about how many demerits they get. I think demerit should not be considered in making up class standing. For a certain number of demerits there should be punishments assigned, extra tours of guard duty, confinement to quarters, &c. There is a feeling in the corps rather to the prejudice of a cadet who raises himself above others by avoiding demerit.

Cadets go into the service ignorant of it in a great measure, and often not capable of judging what corps they are best fitted for. They ought to have some practical experience, before being permanently assigned to particular corps. I cannot, however, suggest a method by which this could be done.

The effect of restoring to the Academy cadets found deficient in studies, or dismissed by courts-martial for bad conduct, has been, particularly during the past year, very injurious to discipline.

A separation of the first class from the rest of the corps, and placing them in a higher position would, I should apprehend, be injurious to discipline.

The system of demerits I consider a good one if it were properly carried out. I do not think the late regulation a proper one, which allows an appeal concerning demerit to be made to the Academic Board.

The Commission here took a recess for half an hour, and made a second examination of the cadets' mess-hall and building. Upon reassembling, Lieutenant Ramsour was recalled, and, in reply to further questions of the Commission, stated as follows:

I do not think there is sufficient practice in the field with astronomical and surveying instruments. There are theories taught in the philosophical course which cadets would not be able to put in practice, and I think all of the theoretical course would be better understood and remembered, if there were more practical instruction. This would require several months' additional time.

I do not think the instruments in the observatory could be used by the cadets without injury to their adjustment, with the present practical knowledge they have of those instruments.

I think that cadets who have no special talent for drawing, learn lit-

tle in that department. Practice in sketching from nature has been introduced since my class completed their course in drawing.

I do not think that the military exercises, riding, fencing, &c., at all interfere with the studies.

A communication was received and read from Lieutenant-Colonel W. J. Hardee, Commandant of Cadets, in reply to the questions proposed in the letter of the 18th instant. (Appended and marked T.)

Colonel HARDEE being present, in reply to further questions proposed by the Commission, stated as follows:

There is so intimate a connection between the systems of tactics in different arms, that a well-instructed field officer should be able to give instruction in all.

The system of light infantry tactics now taught at the Academy is, I think, applicable to all movements of infantry troops. I think the time of their reaching particular points can be calculated with the same precision as with heavy infantry. With the latter the double quick time can be dispensed with. The cadets are benefited physically by the light infantry drill. The manual in this system was intended for the short arm and the saber bayonet. That now in use at the Academy is adapted to the old arm. There ought to be a new manual for the rifle-musket. A single manual cannot be devised that is suitable for all arms.

A graduate of twenty-one should be able to fill any command to which he *ought* to be assigned. Under the four years' course I consider schools of application indispensable. I doubt whether the academic course could be made to include the instruction that should be given in such schools.

In the course of equitation I have found the models of the greatest advantage. The cadets acquire an excellent knowledge of the veterinary art. In order to introduce this course, I have had to abandon much of the study in cavalry tactics; but the knowledge of infantry tactics, with the practical instruction in cavalry, makes up for the deficiency.

In the selection of captains of the Army as professors, there would, perhaps, be some inconvenience avoided by confining the choice to what are called the scientific corps; but the exclusion of officers of the line would be, I think, an invidious distinction. The professors should be made to teach special sections, as this would oblige officers who might at any time be detailed for that duty, to keep up a certain knowledge of the course.

I think the "four years' rule" an admirable one, if applied with discretion. The Superintendent might be made an exception, unless that position were thrown open to officers of all corps. Exceptional cases should also be made where, by the operation of the rule, all of the instructors in a particular department would be removed at the same time.

The course on strategy has, perhaps, more attraction for the cadet than any other pursued at the institution. I think it is sufficiently long. It induces the young men to read, and for that purpose they should be allowed to take books from the library. The course of strategy, grand tactics, &c., was transferred to my department from that of engineering.

I have two assistant instructors of cavalry, two of infantry, and one of artillery. The cavalry officers, in addition to equitation and cavalry tactics, were to teach outpost duty; the infantry officers to teach infantry tactics, strategy, grand tactics, logistics, &c.; the artillery officer

to teach artillery tactics and army organization and administration. A regulation of the War Department, however, required each instructor to take sections in each study, which has some disadvantages. There are two classes under instruction. I have a general supervision of the course, which I accomplish by visiting the section rooms and putting questions to the cadets. There are lectures delivered by the instructors and by the cadets.

A new commandant will have difficulty, in addition to his other duties, in mastering all the subjects which he will have to supervise. To relieve him there should be an additional officer of artillery to divide the labor. This officer should prepare lectures, and be entirely charged with the artillery instruction, with army organization, and discipline, &c., and should teach the first sections in all of the subjects that do not belong to some special arm.

As commandant I have the entire charge of the discipline. All reports come to and are examined by me. The system is as follows: When a cadet is reported for an offense the report is shown to me, recorded in a delinquency book, and read at evening parade; the next morning, if the young man pleases, he may submit to me a verbal excuse. If this is satisfactory I remove the report; if not, I ask for a written excuse, which is referred to the reporting officer. If this reference is satisfactory I remove the report; if not, it is referred to the Superintendent, and passes beyond my control.

Where there is a question of fact I take the cadet's word, unless there is some strong reason to distrust him. Where there has been an absolute question of veracity I have always stated the circumstances, and asked for an investigation.

The regulation that a cadet who receives 100 demerits in six months shall be dismissed, ought to be enforced. A few years ago a cadet that exceeded the required number was invariably dismissed from the Academy; now he never is; and the effect is most injurious to discipline, rendering the cadets careless and inattentive to regulations.

The Commission have adjourned, at 3 p. m., to meet at 10 a. m., tomorrow.

J. C. IVES, *First Lieut. Topographical Engineers,*
Secretary.

WEST POINT, N. Y., *July 31, 1860.*

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

A communication was received and read from First Lieutenant C. W. Field, Second Cavalry, in reply to the questions proposed in the letter of the Commission of the 18th instant. (Appended and marked U.)

A communication was received and read from First Lieutenant S. B. Holabird, adjutant of the post, containing views in relation to examinations for promotions in the Army. (Appended and marked V.)

Brevet Second Lieutenant FRANK HUGER, Third Infantry, was called, and, in reply to questions proposed by the Commission, stated as follows:

As regards the course of instruction I think the ethical course should be abridged. Prefixes and suffixes, moral science, and certain papers that are attached to the course might be omitted or very much short-

ened. The study of moral science is made a farce of, and had better be left out.

The ordnance course has been too short. The practical instruction is perhaps as good as it can be for the time allowed, though I think an unnecessary time is given to infantry drills.

The system of discipline, I think, requires no change. The regulations are sufficient, and only require to be carried out to insure good discipline.

The military duties do not, I think, interfere at all with the studies, but are rather an assistance than otherwise.

The system of signing certificates is very pernicious. The certificates have been multiplied to an improper extent. The officer of the day alone should be required to sign one.

The regulation allowing an appeal to the Academic Board in case of a report has, I think, a bad effect upon discipline.

The regulation requiring cadets to be dismissed who have more than a certain number of demerits should be carried out. The practice of restoring dismissed cadets has been most injurious to discipline. The failure in carrying out the regulations appears to have been due to influences brought to bear at Washington in favor of the delinquent.

In giving excuses for reports, questions of veracity have arisen and have not been properly investigated. I have heard of a cadet applying in vain for a court of inquiry. The cadet's honor is thus impugned, and he has no redress.

Great injustice is sometimes done to cadets by arranging their order of rank, in commencing a study, according to their standing in some previous study. I think they should be arranged according to their general standing, which takes into account all of the studies. The manner is important, as a cadet is very apt, after being at the Academy for two or three years, to retain, in many less difficult studies, the standing with which he commences.

I do not think demerits should enter into class rank. The consequences are too remote and are not sufficiently appreciated by the younger cadets. It would be better to punish cadets at once for misconduct, and in some other way.

The cadets should have more access to the library, and should have permission to draw out books. At the present, the library is, to a great extent, closed to the corps.

The cadets of my class attained little proficiency in the Spanish language. At that time the course had just commenced. The professor had no assistant, and taught the whole class. The French language was taught more thoroughly. I think the Spanish course has, since the time my class studied it, been considerably extended and improved.

I have not found the course wearisome or oppressive. There has generally been ample time to learn the lessons, though occasionally, when there have been three recitations a day, it has been difficult to prepare them properly.

The course of mineralogy and geology is taught with much thoroughness. There is a great deficiency in the course of practical instruction in the use of surveying and astronomical instruments. I do not think anything could be omitted with advantage from the course of natural philosophy, &c. The instruction in mathematics contains all that is necessary to enable one to master the subsequent courses.

The fare at the mess is not what it should be. There is frequently not enough of food to eat that is fit to be swallowed. I have often, after a hard morning's work, been compelled, for want of other suitable food,

to dine off of bread exclusively. I think that cadets might have a certain superintendency over the commissary department; and this would enable them to gain information respecting that department and the preparation of accounts—subjects now of which they are taught nothing—that would be of great value to a young officer.

I think throughout the whole course of instruction there is a deficiency in practical applications of the theories that are taught. This probably arises from a want of time.

The Commission here took a recess for an hour, and again visited the cadets' mess-hall and building; after which the hospital was visited and examined.

Upon reassembling, Lieutenant-Colonel HARDEE, Commandant of Cadets, was recalled, and, in reply to questions proposed by the Commission, stated as follows:

If a cadet feels aggrieved by a report, the regulations now allow him to refer it to the Academic Board. Apart from this, he can make an appeal, under the thirty-fifth article of war. I know of no case where a cadet has made such an appeal, though I have advised the Superintendent to offer this method of redress in at least one case. The 134th paragraph Academic Regulations also affords a means of redress in case of a supposed wrong.

In case of the restoration of a four years' term, as it would be necessary to omit a portion of the present course, I would suggest, in addition to the studies I have mentioned—Spanish and strategy—to omit a portion of the ethical course, moral science, logic, &c. I would like, also, if it were practical, to see the standard of admission raised. The course of practical engineering, I think, might be omitted without injury.

As a matter of practical importance to our officers, I consider the Spanish language of greater value than the French. As respects general education, of course the French is more necessary. I think that both the languages could be taught by one professor.

Paragraphs 109, 110, Academic Regulations, give the punishments to which the cadet is liable and how they may be inflicted.

When an officer is required for duty at the Academy in a particular department, the Superintendent prepares a list of names, which the head of the department arranges in order with regard to the fitness of the individuals for the duty. The paper is sent to Washington, when the detail is made generally from among the persons upon the list.

I do not think a cadet's graduating standing is at all a sure criterion of his fitness for duty afterwards in the tactical department.

It is important that the greater part or all of the officers in one department should not be relieved at the same time.

At 4 p. m. the Commission adjourned, to meet 10 a. m. to-morrow.

J. C. IVES, *First Lieut. Topographical Engineers,*
Secretary.

WEST POINT, NEW YORK,
August 1, 1860.

The Commission met at 10 a. m. Present, all the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

Communications in reply to the questions proposed by the Commission

in the circular letters of the 18th and 23d ultimo were received and read from Colonel S. Cooper, Adjutant-General; Lieutenant-Colonel Justin Dimick, Second Artillery; Professor A. D. Bache, Superintendent Coast Survey; Professor R. H. Agnel, United States Military Academy. (Appended and marked W, Y, Z,¹ A.)

Lieutenant-Colonel W. J. HARDEE, Commandant of Cadets, was recalled, and in reply to the questions proposed by the Commission, stated as follows:

The present arrangement in regard to the supervision and management of the cadets' mess-hall is a good one. I direct the officer in charge to make a daily inspection, and to receive reports from cadets in respect to anything that is irregular or improper about the fare. I do not think it would be practicable to permit the supervision and charge of the mess to be in the hands of any of the cadets. Paragraphs 260 and 272, Academic Regulations, prescribe the rules for the government of the mess. The Commandant is the inspector, but the Superintendent has exclusive control of the fare given to the cadets. If the present regulations are carried out I do not think there is any necessity for a change. I would recommend that the fare be improved, and that a higher price be paid by the cadets for board. This might be raised to \$12 a month with the present pay.

Captain W. R. PALMER, topographical engineers, being present, in reply to questions proposed by the Commission, stated as follows:

I have had charge of the Coast Survey Office for a few years past, and my experience has led me to the conclusion that the young officers who are detailed for service upon the survey are generally deficient in the practical knowledge of instruments. Even the simplest instruments, the theodolite and level, they can scarcely use to advantage without considerable training. I should think that a month of practical instruction at the Academy would give them a tolerable amount of skill, and be a great improvement to the course.

First Lieutenant G. H. MENDELL, topographical engineers, acting assistant professor of philosophy, was called, and in reply to questions proposed by the Commission, stated as follows:

With regard to the course of philosophy, I do not think there is anything to add to it. It is now very complete. There are some subjects, particularly in the branch of mechanics, that are perhaps too difficult for the lowest sections. I have not had personal experience with those sections, but that is my opinion. I think that there are many in every class who have not enough knowledge of mathematics, owing to a want of aptitude for that study, to master the whole course of philosophy. I would therefore omit certain portions. The standard at the Academy is not too high for competent persons, but I have sometimes thought that there are many in the lowest sections whom it is scarcely worth while to instruct in the whole of the present course. It is of little practical value to them afterwards.

In each section there are ten or twelve cadets. The recitation occupies an hour and a half. A portion of the cadets are sent to the black-board to make demonstrations; others are questioned. Occasionally lectures are delivered by the professor. The course is sufficiently illustrated by experiments.

There is not enough time given to the practical use of instruments, particularly astronomical instruments. Two or three months would be required to give the knowledge that should be possessed of the adjustment and use of the transit, sextant, zenith instrument, chronom-

eters, &c. I assume that the use of surveying instruments is already understood. More practical instruction should be given in the use of barometers.

I think the present method is a good one of assigning cadets to corps. You may not invariably get the best talent, but you are always sure of application.

I think engineer officers see enough of service with troops in the ordinary line of their duties. To make a good topographical engineer, a certain amount of scientific taste and mathematical talent is necessary. Drawing is not so important. A certain amount of skill is required in making reconnoissances, &c., but for the most elaborate drawing it is generally better to employ professional draughtsmen. There is no distinction between the duties of engineers of the line and topographical engineers. The Academic Board, however, recommend a certain set of cadets for the engineer corps and all other corps; a second set for the topographical engineers and all corps but the corps of engineers. There is no reason in this, and it operates against the topographical engineers by inducing certain cadets, who might otherwise go into that corps, to believe that the other requires a higher order of talent, and therefore to give it their preference.

First Lieutenant HENRY DOUGLASS, Ninth Infantry, assistant professor of drawing, was then called, and in reply to questions proposed by the Commission, stated as follows:

There is enough instruction given to the cadets in sketching topography in the field to enable cadets or graduates afterwards to proceed to practice without further instruction. The system of topography taught was adopted by Professor Smith from the French. It is the vertical system in use in the Army. If topographical drawing came last, instead of first, in the course of instruction, the cadets would sketch topography better than they now do before they have commenced the other style of drawing; but the topographical practice is merely mechanical, and leads the beginner up to the other. The main object in teaching drawing is to enable the officers to sketch topography. There are no text-books used in the drawing department. I give a course of lectures to the third class.

First Lieutenant J. C. KELTON, Sixth Infantry, instructor in the use of small-arms, presented a communication in reply to the questions proposed by the Commission in their letter of the 18th ultimo, which communication was read. (Appended and marked B¹).

In reply to further questions proposed by the Commission, Lieutenant Kelton stated as follows:

The principal advantages to the soldier in gymnastic exercises are, increased endurance and self-confidence. The formation of a proper gymnastic equipment at the Academy would be attended with little expense. The only place at all suitable is the old riding hall, and that is too low and contracted to make a good gymnasium.

The cadets manifest a good deal of interest in the instruction in the bayonet exercise.

I do not think that too much time is devoted to infantry drills, though, perhaps, a portion of the time could be more profitably employed. Many of the company drills might be replaced by skirmish drills.

I think it would very much interfere with discipline to place the first class in a higher position than the other cadets, provided they contin-

ued to associate with the others. If they could be separated from the others, there might be many advantages attending such a change.

At the western posts I do not think there is much study among the graduates after entering their respective corps.

At 3.15 p. m., the Commission adjourned to meet at 10 a. m. to-morrow.

J. C. IVES,

First Lieut. Topographical Engineers, Secretary.

WEST POINT, NEW YORK,

August 2, 1860.

The Commission met at 10 a. m. Present, all the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

A communication was received and read from Professor A. E. Church, of the Military Academy, in reply to the questions proposed in the circular letter of the 18th ultimo. (Appended and marked C¹.)

Professor CHURCH being present, in reply to further questions proposed by the Commission, stated as follows:

Difficulties seldom arise from cadets entering the Academy too young. We generally find the minds of young men at the age of sixteen sufficiently developed to master the course. It more often happens that a youth who has put off acquiring an education till the age of twenty-one fails from the want of habits of study. I would not recommend any change in the regulation respecting the required age for admission, excepting, perhaps, if a five years' course is adopted, the superior limit of age might be changed from twenty-one years to twenty. As a general rule, the best minds are among those who have entered the Academy between the ages of sixteen and nineteen.

When the five years' term was established, the entering class was divided into two, according to age. The younger division, which had a course, for a time, parallel with the other, evinced a marked superiority over the elder. It was, perhaps, partly accidental.

I would have each section in my department study about the same time, and the same amount that it does now. The first section can easily acquire the course allotted to it, while the last is learning its portion.

The effect of restoring to the Academy cadets dismissed for bad conduct has been very injurious to discipline. The recommendation of the Academic Board, that cadets found deficient in studies should, in a few cases, be allowed to go over the course of the preceding year again, has, I think, a good effect, in encouraging cadets in the lowest sections to studious habits and good conduct.

I think that the number of demerits should have its influence in the formation of class standing. Without this regulation the cadets would become careless in their conduct and inattentive to many of their duties. The systematic and punctual habits of the cadets, which go so far in the formation of a military character, are acquired, in a great measure, from the influence of this regulation, while the discipline of the Academy is greatly promoted.

The order restricting demerit to violations of published regulations is not, I think, a good one, as all the cases that may come up cannot be covered by written rules.

List of demerit is not a proper name. It should be called the conduct roll.

I think the method of recommending graduates to corps or arms is about the best that could be adopted. The subject has been often discussed in the Academic Board, which has always come to that decision. There are fewer cadets found deficient now than formerly. I think this is due to a more thorough instruction of the lower sections. I do not think the standard has been made lower.

I have sometimes thought that too much care is bestowed upon the lowest sections; that we were helping and pushing along young men who were not disposed to do much for themselves.

It would be an advantage to have the assistant professors, particularly the principal assistants, retained for a number of years. The longer a good assistant is kept the better for the Academy. There is a disadvantage to the Army in keeping officers here too long. I think we could get along well with the four years' rule, provided we could always get the best men. It would occasion great inconvenience, however, to have many relieved from the same department at the same time. A difficulty about retaining assistants has sometimes arisen from the deficiency of suitable quarters, officers having sometimes felt obliged to live across the river or at the hotel. If the system of frequently relieving assistants is continued, the effect would be good to give to all the same increase of compensation. I do not believe that the number of assistants could be further reduced without injury to the Academy.

I do not think that the chaplain should be entirely separated from the duties of instruction. He has perhaps now too much upon his hands, but his relations to the cadets as instructor aid him in his duties as chaplain.

Four or five days' more of practical instruction in surveying, I think, would answer the desired object in that department.

Two communications were received and read from Lieut. Col. W. H. Emory, first cavalry, in reply to the questions proposed in the circular letters of the 18th and 23d ultimo. (Appended and marked D¹ and E¹.)

At 3.30 p. m., the Commission adjourned to meet at 10 a. m. to-morrow.

J. C. IVES,

First Lieut. Topographical Engineers, Secretary.

WEST POINT, NEW YORK, August 3, 1860.

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

A communication was received and read from Professor Horace Webster, New York Free Academy, in reply to the questions proposed in the circular letter of the 18th ultimo. (Appended and marked F¹.)

Colonel J. COOPER, Adjutant-General, being present, in reply to questions proposed by the Commission, stated as follows:

Instruction at the Academy in each arm of the service should be given, I think, by officers belonging to that arm. The commandant, being in command of a battalion organized purely as infantry, should be an infantry officer, and should have no charge of the cavalry and artillery instruction.

At present, in detailing officers for service at West Point, the interest of the Army is consulted, necessarily, in preference to that of the Academy.

In my experience at the bureau I have frequently remarked in the communications of officers a want of skill in composition, deficiencies in style, grammar, power of expression, &c. This is not a general thing, but cases often occur.

If there were competency examinations, as I have recommended for staff corps, I would say that the officers at the Academy should be represented upon the examining board; that the examinations should be held at West Point, and that each officer should have a certain time allowed him for preparatory study.

Professor W. H. C. BARTLETT, United States Military Academy, being present, in reply to questions proposed by the Commission, stated as follows:

The present system in regard to the cadets' mess is a good one if properly carried out. Perhaps now there is an absence of sufficiently rigid inspection. There might be an inspecting committee appointed, and if a complaint is made the matter should be at once investigated. I think it would be well for the instructors of tactics to dine with the cadets at the mess.

The time devoted to my course should not be reduced. I have only the control of an hour and a half a day of a cadet's time. I should not suppose that there was time enough given, in quarters, to prepare the lessons in natural philosophy. To do this properly, four or five hours would generally be required. Leisure should be allowed also to think over the recitation. After reciting the cadet should have an hour or two of rest.

In the way of practical application we can do very little. There is not sufficient time. As soon as the cadets are properly prepared by the study of a subject I deliver familiar lectures, during which they are invited to propose questions, and are asked themselves to give explanations. On the next day they are questioned upon the lectures. There would not be time for cadets to perform the experiments.

The course of mechanics is succeeded by the study of acoustics, and then optics. The latter is important in the astronomical course which immediately follows. The astronomical instruments are fully explained. All the parts of each are exhibited, so that they may be better understood. There is a certain amount of practice in the observatory, and during the spring in the field; and I think the graduate of the first section should be at least able to obtain the latitude and longitude. It would be difficult to bring the lowest sections up to the practical skill attained in the higher sections.

The lowest graduates of a class would not, in my opinion, be able to perform the duties of engineer officers. I believe that a system could be proposed which would render all of the graduates competent to undertake those duties. Let the entering examination be rigid, and the first year be a year of trial. Let there be a thorough course of *elementary* English and mathematical instruction—the two studies counting equally in making up the standing; let the English course be confined to reading, writing, spelling, and to daily lessons in grammar, particularly in parsing; have a severe examination at the end of the year, and if the cadet is not entirely proficient, dismiss him. Do not even give him the benefit of a doubt. The government educates the young men, and should be entitled to the best talent and industry of the country. The first year, then, should be a sufficient test. In the programme for

the subsequent year those things should be retained principally which cannot well be learned after graduating, but much should be left for subsequent study. Two years would be sufficient for all the members of the class to be properly qualified in mathematics to master the higher branches of the course.

With such a system, rigidly carried out, I think the foot of the class would be a competent engineer.

Now the first section have perhaps enough mathematical knowledge to learn the higher branches well. In the second there is a great falling off. In the lowest section the amount of mathematical proficiency is not large.

I do not think the present preliminary examination fairly carries out the terms of the law. It is not sufficiently strict.

There is nothing in the present mathematical course, and no part of my own, that could properly be omitted in the education of an engineer.

I think the course of practical instruction is as extended as it should be, considering the length of time at our disposal. The five years' term I do not regard as too long. It is long enough if properly employed.

I think the instructors at the Academy should have more permanence, and the heads of departments be allowed the selection of all of their assistants. Clever men should be selected from graduates of at least three years' standing. They would require two or three years to enable them to learn to teach properly, and they should remain as long as the interests of the service will permit. To all of the assistants I would give the increased pay now accorded to the principal ones.

The first assistant should be selected for his qualifications, and not be entitled to the position from Army rank.

To allow cadets to draw books freely from the library, without reference to the subjects of the books, might prove an interference with their studies, by supplying them with entertaining material in place of their tasks.

By direction of the Commission the following communication was addressed to Professor A. D. Bache, Superintendent Coast Survey :

UNITED STATES MILITARY ACADEMY COMMISSION,
West Point, N. Y., August 3, 1860.

SIR: I am desired, by the Commission, to request, at your earliest convenience, your replies, orally or in writing, to the following questions :

1. What methods of instruction in mathematics, physical science, and engineering are, in your opinion, best adapted to give a clear comprehension of the principles of those sciences ; to fix them in the mind of the student, and enable him to make, with readiness, practical application of his knowledge in the various duties required of an officer of the United States Army ?

2. In preparing a youth for the pursuit of any of the departments of practical science, do you consider it desirable that he should proceed at once, upon the completion of theoretical study, to the practice of his profession ; or should he, with academic aid, and under restrictions adapted to his condition, receive special instruction in the practical application of theoretical knowledge before entering upon the active discharge of the duties of his profession ; and, if desirable, to what extent should this instruction be carried ?

Very respectfully, your obedient servant,

J. C. IVES,
First Lieut. Topogr. Engineers, Secretary.

A communication was received and read, in reply to the questions proposed in the circular letter of the 18th ultimo, from First Lieutenant Rufus Saxton, Fourth Artillery, assistant instructor of artillery at the Academy. (Appended and marked G¹.)

At 3 p. m. the Commission adjourned to meet at 10 a. m., to-morrow.

J. C. IVES, *First Lieut. Topographical Engineers,*
Secretary.

WEST POINT, NEW YORK,
August 4, 1860.

The Commission met at 10 a. m. Present, all the members excepting Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

The Commission then visited the lecture room of the philosophical department and the observatory, the academic building, the drawing academy, the chemical lecture rooms, the mineralogical and geological cabinets, the department of ordnance and gunnery, the model rooms and the gymnasium, and inspected the apparatus, instruments, models, &c., used in the course of instruction; after which an examination was made of the mess hall and building, the stables, the riding hall, the cadet barracks, the laboratory, the artillery and dragoon barracks, the practical engineering and ponton apparatus; also the barracks of the sappers and miners, the work-shops, the store-houses, &c.

The Commission then adjourned to meet at 10 a. m. on Monday.

J. C. IVES, *First Lieut. Topographical Engineers,*
Secretary.

WEST POINT, NEW YORK,
August 6, 1860.

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

Assistant Surgeon JOHN CAMPBELL, United States Army, being present, in reply to questions proposed by the Commission, stated as follows:

I have been on duty at the Academy for three years. During my experience I have never discovered anything in the system of discipline or course of instruction injurious to the health of the cadets. I have seen no indications of mental or physical overwork. There are sometimes complaints that appear due to the method of heating the barracks by furnaces, but they are generally of an unimportant character.

I think the cadets are the healthiest set of men I ever saw. The cases of indisposition, in nine instances out of ten, are very trifling.

The great disproportion in the sick and mortality bills is due to one or two causes. If a cadet is excused from duty, either military or academic, from any bodily ailment however slight, his name is put on the sick report. There is sometimes, too, a disposition on the part of certain cadets to get rid of duty which they are quite able to perform.

I always examine the cadet, but frequently the appearance is not a certain evidence of the person's state, and then I take the cadet's word, provided there is no strong reason to doubt it. Very much the same set of persons will be found generally upon the sick report.

I think the number of names on the report has been increased since a regulation was made removing the place where the surgeon meets the cadets from the hospital to the barracks or camp. This renders it more convenient for cadets so inclined to repair for slight causes to the surgeon and get excused from duty.

The strict enforcement of the regulation providing a fixed time for changes of clothing, leaving off overcoats, &c., irrespective of the forwardness or the reverse of the season, has occasioned a certain amount of illness.

I think it would be well for the cadets, during the winter, to wear boots, or else higher shoes than they now do.

Accidents during drills, riding, &c., are not frequent. Serious casualties are very rare.

First Lieutenant MILTON COGSWELL, eighth infantry, being present, in reply to questions proposed by the Commission, stated as follows:

I was on duty for five years at the Academy as instructor of mathematics, and afterwards of tactics. For the past five years I have been on duty in New Mexico.

As regards the organization of the Military Academy, I think there should be a separation of the departments of cavalry, artillery, and infantry tactics; that each should have its head, who should be a member of the Academic Board. I think that there are too few officers of the Army now upon that board. The Commandant should be an infantry officer, and should have four assistants, each from that arm; he should be a field officer. The heads of the artillery and cavalry department should have at least the rank of captain. All should take precedence of the members of the Academic Board not officers of the Army.

The professorship of ethics ought to be separated from the chaplaincy. The duties of instructor interfere with the proper performance of the duties of chaplain.

The decisions of the Academic Board in regard to deficiencies in studies and conduct ought to be final, and not subject to reversal at Washington. The discipline has been much weakened by this interference. I recollect many cases of such a character while I was a cadet. I do not remember any that occurred while I was here as an officer. The less the Academy is interfered with by outside influences the healthier will be its condition. Even courts-martial I consider unnecessary and objectionable, inasmuch as they do not regard the academic regulations, but only the articles of war, which are not sufficient to maintain discipline at the Academy. The Academic Board should have power to examine and dismiss without trial. The cadets should be in the position of the students at our colleges, who may be suspended or dismissed by the faculty without trial.

Cadets should be instructed in the duties of judges-advocate and recorders of boards; should learn how to make out commissary and quartermaster's papers, and understand the details of taking charge of a company. There should be a further course of instruction in grand tactics and strategy. This would give a taste for those studies, which would cause them to be pursued after graduating. There should be more models in the different departments, and more practical instruction, especially in surveying and the use of astronomical and other instruments. This knowledge has to be acquired now after graduating.

I would add even a sixth year to the course of study rather than dispense with these additional branches. The graduate cannot well pursue them.

The attempts at establishing schools of practice have not, I think, been successful. The young graduates consider themselves out of leading strings, and have no incentives to study. The troops, also, may be required elsewhere, and the schools, before the experiment is fairly tested, be broken up.

I do not think that a cadet should ever be permitted to go over a year's course a second time; but, if deficient in studies, should be irrevocably dismissed. The standard of admission is not sufficiently high. Many do not understand arithmetic well enough to acquire the course of mathematics. The lowest sections do not learn enough of mathematics to enable them to master the higher branches of physical science. I do not think, however, that the public interest requires that all who are unable to become proficient in the studies pursued by the highest sections, should be separated from the Academy.

Studies are not much pursued after graduating. At the western posts it is difficult to procure books, and there is little incentive to study. A retired bill, and the concentration of troops at few posts, would improve the character of the Army in this respect. Competitory examinations for promotion would not always be just. They would exclude many who had been upon active service upon the frontier, with little or no opportunity for study. It would be difficult also to select boards unaffected by political influences, and who would give just and uniform decisions.

The study of moral science is not beneficial to the morals of cadets. The books are not serviceable, nor the manner in which they are taught. Morals are to be learned at home, or, at any rate, can be taught better from the pulpit than in the section room. The study of logic and Blair's Rhetoric should also be abandoned, and a good text book on composition and the English language adopted. There should be additional study of English grammar. Officers will never be good composers while there is studied at the Academy so small a grammar and so large a rhetoric. The cadets upon entering are frequently deficient in orthography.

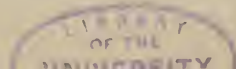
The study of Spanish is very important. Half of our officers come in contact constantly with the Spanish race; and, even with the Indians, the Spanish generally affords a means of communication through captives and members of the tribe who have acquired some knowledge of that language.

Cadet Lieutenant A. AMES, of the first class, United States Military Academy, was called, and answered the questions proposed by the Commission, as follows:

A cadet, who has perfectly learned all of the mathematical course, can solve most of the problems in the higher branches. In the philosophical course there was a chapter on molecules, for which a higher knowledge of mathematics was required than we possessed. We had to receive the expressions as they were furnished in the text. In other parts of the course there were certain problems that, perhaps, only one or two would solve, and the others would get the solutions from them. These problems, as connected with the principles of the study, were probably of no great importance.

About one-half of the class, I suppose, know enough of mathematics to be able to master the higher branches.

Have studied history, logic, and moral science, and from all of these studies learned a great deal. There was a good deal said against moral



science among the members of my class, but, I think, without much reflection. The book was somewhat ridiculed as not appropriate to a course of studies, but with a certain portion of the class was better received than logic, and still more so than the history of philosophy.

Have completed the French course. I cannot read French with entire facility, and, with my present knowledge, would select the translation in preference to the original.

Have finished also the Spanish course. I cannot speak Spanish at all. In both French and Spanish the period of study was much shortened for our class, owing to the temporary change from a five to a four years' term.

The first six months of the fourth-class year were, to me, the easiest. The studies during the second-class year were perhaps less difficult, but there were more of them. We generally have some spare time. There is plenty of time to prepare lessons and to have some leisure for reading. Those who stand highest in their classes study before breakfast, but I think the majority do not, to any great extent. I do not consider the course of study too hard. Riding and other military exercises are rather a relief than an interruption. All like the variety and the exercise.

The effort to stand high is prompted almost wholly by the prospect it holds out of selecting one's own corps, and being able to enter one of the scientific corps.

At one time it was reported that all of the graduates were to be put into the line, and afterwards assigned to their respective corps. This occasioned great disgust among the cadets. We in the first section thought it would be hardly worth while to study if such was the case. The mere honor of standing high would not be a sufficient incentive with a great many of the class. Examinations sometime after graduating would operate, I think, unfairly. Those who happened to go to the frontier would not have an equal chance with the men that remained at eastern stations.

The effects of restoring to the Academy cadets who have been dismissed for deficiency in studies have been very bad. We feel as though such men did not properly belong to the corps. The last order from the War Department, retaining at the Academy sixteen cadets recommended for discharge, did not create any particular indignation, as we had learned to expect such. There is an individual now in the corps who has been found deficient at several examinations. This is mortifying to all cadets who take a pride in the institution. A great deal of feeling has been occasioned during the past few years by the fact that certain dismissed cadets have been put into the Army ahead of their class.

The consideration of demerits in making out class-standing is, I think, essential to discipline. The discipline has been greatly injured by allowing cadets who have exceeded the number of demerits allowed by regulations to remain at the Academy. Some of the cadets will now say openly that they don't care whether they get demerit or not; that they know they will not be dismissed.

The system of rewarding cadets who get no demerit by giving them short leaves of absence has had a good effect. When one has had no demerit since the commencement of a month he tries very hard to avoid them.

I think the discipline, generally, well calculated to raise the tone of the corps. I do not believe that evil results follow from some of the certificates that cadets are required to sign—that of the officer of the

day, for example. The certificates of superintendents of subdivisions are, by some cadets, not strictly regarded. A conventional construction is put upon them not altogether what it should be. The study of moral science does not, in my opinion, have any effect in regard to the duties of cadets in this respect.

A cadet, after signing a certificate which he has strictly regarded, will sometimes be reported for neglect of duty which he has certified to having performed. This reflects upon the individual's honor, and creates much ill-feeling. If a report is given in such a case there should be an investigation, and the circumstances stated to the corps. Such reports would make it appear that our superiors attach little importance to the certificates, and might cause the latter to be less respected by the cadets.

We are led sometimes to think that not enough importance is attached to a cadet's word. When a cadet denies a report, that is, a question of absolute fact, there should be an investigation, or the report should be removed. I have known a cadet to make an open statement that has not been received.

The method of heating the barracks is defective. I have often been compelled to sit by the flue with a blanket around me, or go to bed in order to get warm. This is not the case in all of the rooms. On very cold days, upon the floor where I lived, all of the eight occupants would have to collect in a single room, and it would be almost impossible to study. I have experienced no inconvenience from the escape of gas, excepting a disagreeable odor occasionally.

An invitation was here received from the Commandant, and accepted by the Commission, to attend a cavalry drill of the cadets, and at 3 p. m. the Commission adjourned, to meet at 10, a. m. to-morrow.

J. C. IVES, *First Lieut. Topographical Engineers,*
Secretary.

WEST POINT, NEW YORK, August 7, 1860.

The Commission met at 10 a. m.

Present, all of the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

A communication was received and read from the Hon. Charles Mason, in reply to the circular letter of the 18th ultimo. (Appended and marked H¹.)

The examination of Cadet AMES was resumed. The following answers were given to the questions of the Commission :

I have never experienced any ill effects to my health from the fare at the mess-hall. I do not eat of all the dishes. The fish, in odor and taste, is sometimes disgusting. I am becoming accustomed to the sight of it, but never eat it. There will sometimes be rancid butter, offensive meat, or sour molasses brought upon the table. Dishes are occasionally sent out of the hall; but that which is little or any better often comes back in their place. We have the right to complain, through the first cadet captain, to the Commandant; but have generally found that it was scarcely worth while to take the trouble to do so. The first captain will often say: "It's of no use. I have often forwarded complaints; but I don't think it does any good." The remedy is not adequate. The fare the next day will perhaps be better, and then the same things will occur again. Those that do not have to eat the food cannot

see the matter in the same light as those who do. There is not always enough upon the table; and when a dish is sent out for more, it will sometimes come back empty, with the reply, "There is none."

I do not think that a cadet could act as inspector of the mess-hall to as much advantage as an Army officer. The cadet would have little influence with the Superintendent, and no authority with the purveyor and waiters.

The quality of the food, as a general rule, is good; but the cooking is very bad, and the dishes are not neatly served. Bugs will be found in the sugar, and cockroaches in the soup. It would be better if the inspector could have power to act at once, without referring to the Superintendent. The appeal is made so late as to do little good.

Cadets are sometimes charged for postage without having received letters or papers. It is only a few cents a month; but we don't like the principle. I have heard that the money goes to support the postmaster or postmistress.

Cadet N. R. CHAMBLISS, the first captain of the corps, was then called, and gave the following answers in reply to the questions of the Commission:

We studied enough mathematics to enable us to pursue the higher branches. I do not think we have had sufficient practical instruction in surveying, and the use of surveying and astronomical instruments. Any one who would pay attention, and had a desire to learn, could learn enough to enable him to acquire the requisite knowledge of the instruments by some farther practice. We had no experience in geodesic surveying.

The studies in the ethical department were not interesting, but I considered them generally useful. There was, perhaps, too much time given to logic. I think the study of intellectual philosophy could be introduced to advantage. There is not enough practice in composition. The themes presented are frequently those that have been handed down from class to class, and it would be better to make the cadets write, in presence of the instructor, upon any subject that he may designate.

After completing the course of French, I could read the language with considerable facility. I could not speak it well. I could not converse in Spanish. My knowledge is too incomplete of the latter language to allow me to use it in my intercourse with others. The professor of Spanish, in my opinion, is not capable of teaching the language properly to cadets. I think the corps generally have the same impression. Our class did not have the usual time to study either French or Spanish. I never knew any one who commanded the respect and regard of the cadets in a higher degree than the professor of French. His system of instruction is remarkably clear and practical.

The course of instruction in strategy, grand tactics, &c., is one in which cadets take much interest. While upon those branches they ought to be allowed free access to the library, and to draw books therefrom.

My own feelings and views are in favor of a five years' term. The course is not too long, considering what is necessary to be taught. When cadets enter the Academy at sixteen, they would be too young at the end of four years to enter the Army and assume the responsibilities of officers.

It is ruinous to the Academy to let cadets come back who have been found deficient in conduct and studies. Those cadets who are allowed to again go over the year's course will generally be found at the foot of the succeeding class. Cadets say that the present Secretary of War

will never permit any one to be dismissed and neglect their studies and get demerit with perfect indifference.

For the last two or three years a system has been pursued with the entering class that has been attended, I think, with bad results. The new cadets are not properly trained when they come here. When we entered four years ago we were treated with rigor, were put into rooms without furniture, and had to sleep on the floor. They gave us one blanket, and no one cared whether we put it under or over us. We were kept by ourselves, the old cadets were allowed to run it on us, and we had altogether a hard time. The result was good. We learned discipline and how to obey. When a boy has received his appointment to the Academy he thinks he has a high position in life, and comes here with enlarged notions. This is particularly the case if he has rich or influential friends. He comes on the Point with a swelled head, a moustache, and stripes on his trousers. He never can be made a soldier until the nonsense has been taken out of him, and this the old system did. Now it is all different. The drill masters are told not to be harsh with the new cadets. Severe penalties are incurred by those who try to "run it" on them. When they get homesick and look a little crest fallen, the officers treat them as mothers do their babies, and the effect is to make them good for nothing. I recollect one case in particular, under this mild form of discipline, where especial care was taken of the relative of a great man, and he afterwards became one of the worst cadets at the Academy. The right way is to treat the new cadets with rigor and severity, and let them be "run on" as much as possible. They come expecting to have a good time, and they should have a bad one till they acquire correct ideas of things. They find, then, that no one here cares for their social position, or their political friends, but that they must establish a position by their own qualities, and it makes men of them. Those that neglect their duties, and have no regard for discipline, soon find that they are considered worthless. I would especially insist that the new cadets should be entirely separated from and not allowed to associate with the classes above them. This teaches them their insignificance. There is an inclination, of course, on the part of the old cadets to "run it" on the entering class. The disposition may be wrong, but the results are excellent. It makes good soldiers. The son of a great man is much more likely to be hardly treated than the son of a poor one. The presumption is that the former is disposed to put on airs. A modest boy, who attends to his duties and obeys orders, never has any trouble.

The new system does not work well. I think the officers themselves are getting tired of it. When I was a "plebe" I jumped if an officer passed me. Now, the young men scarcely think it worth while to salute when one goes by.

I do not think the new cadets should be drilled by members of the fourth class. The latter have not sufficient experience as drill masters.

I believe that it would be injurious to discipline to place the first class in a position above the other cadets. They might be relieved from all sentinels' duty, and be allowed to walk on public lands, but they should be subjected in ranks to the same discipline with the other classes. No difficulties occur between first class privates and cadet non commissioned officers.

I think that the leaves of absence now granted to members of the first class during the encampment interfere with the discipline of the corps. The constant changing of cadet officers arising from these fur-

loughs has a bad effect, and the laboratory and practical engineering duties have to be somewhat neglected.

The certificate given by the officer of the day is generally, I think, regarded; and it has a certain good effect, being looked upon as a reason why the officer of the day is bound to report cadets. To the certificates of superintendents of subdivisions not much moral sense is attached. They are sometimes made out by wholesale, signed beforehand, and ready for use before the inspection is made. The certificates are regarded by some cadets somewhat as the oaths are, which cadets take on entering the Academy, to obey all orders of superior authority. Literally this is to swear to keep every regulation, but, of course, is not so construed.

In making excuses for reports, cadets feel that it is obligatory upon them, in honor, to state the exact truth. Any one doing otherwise, would, if it were known, be cut by the rest of the corps. I do not think the general sentiment of honor could be higher than it is. A sincerely religious man is respected more in the corps of cadets than among any set of young men I ever knew.

The method of heating the cadet barracks is defective. The heat is insufficient and irregular. I have often had to wrap up in quilts in my room in order to keep warm. Sometimes the gas is very annoying.

I have, as first captain, the power to send bad dishes out of the mess hall, but frequently others are sent in which are no better. If the amount is insufficient, generally, but not always, more can be obtained. The butter is sometimes bad. The fish is seldom good. The bread pudding is made from old scraps picked up about the table. The cooking is very defective. We have to eat the whole of a beef. If a cadet breaks anything in the mess hall it is charged to him.

Cadet JOHN ADAIR, a captain in the first class, was then called, and gave the following answers to the questions proposed to him:

The mathematical course is generally sufficient for the applications that have to be made of it. In the philosophical course some mathematics has to be applied, which has not been learned. A few astronomical problems are solved by methods not previously explained.

Our class went through a full course of composition, but without much advantage. We wrote themes the first year. It would be better to write them later in the course.

We had less than is usual for the study of French, but some of the class learned enough to read with facility. With six months more study all would, I think, have had the knowledge.

We learned little Spanish. The cadets did not think the professor proficient. His knowledge of English was not good, and he was not able to command the respect of the sections. The class would trifle with him and treat him disrespectfully. Spanish counted little in standing, and cadets would not, under the circumstances, take pains to learn. They found they could look into the text books and assist each other, in the section room, and that it was of little use to study. The Spanish professor is personally liked. The cadets have great sympathy with him, and would be sorry to see him displaced, but do not generally consider him a proper person to fill the position. He did not report men, not knowing when they deserved it, and could not preserve order. I think he displayed ignorance not only of English, but of the conjugation of the verbs in Spanish.

The French professor is considered an admirable instructor, and is universally liked and respected.

There is nothing that I have gone over in the course of study which I would not desire to learn, but considering the subjects taught, with relation to the time and other subjects, there are some things I would omit; for instance, the history of philosophy, and Thackeray on organization, and perhaps some other parts of the course. I would have a fuller practical course in chemistry and philosophy, the use of surveying, and astronomical instruments, &c. I do not think, however, that the term of study could well be shortened. At one time I had a preference for a four years' term, but now my judgment is in favor of one of five years.

The greatest incentive to study among those near the head of the class comes from the desire to graduate high and get into a scientific corps. Those near the foot of the class study from the fear of being dismissed. This fear has been removed during the past two or three years, and the standard of proficiency is thereby lowered. There has been recently a good deal of neglect. Cadets say, "Even if we are dismissed, we shall be sure of being sent back." The only remedy would be to carry out inexorably the rule. The sympathy of cadets may be in favor of a man pronounced deficient, but they would, as a general rule, be altogether opposed to his restoration to the Academy.

I think that demerits should be considered in making out class standing, but only those received during the latter half of the course. Before that there is not enough understanding and appreciation of the effect they may have upon a cadet's or graduate's future career.

At the examination for admission to the Academy, boys are so much frightened that their abilities and attainments are scarcely tested. After subsequent examinations there are sometimes complaints of professors and instructors having shown partiality, though they are usually thought to be as little so as men can be. It is thought that a disagreeable cadet will sometimes be pushed down lower than he deserves.

It is my opinion that some of the cadets take a very wrong view of the certificates which they sign. The evil is a great one. The inspectors of subdivisions sign a clear and explicit statement, but regard it as a mere matter of form. They claim the right to do so from long usage. I have known an instance where an officer of the Army saw a cadet making out the certificates for the month following, and on being told what he was doing, did not reprove him. Cases similar to this have given some cadets the idea that their view of certificates is the same as that taken by officers. Neither the Superintendent nor the Commandant have ever, to my knowledge, spoken to cadets of any obligation in this respect. It would be much better to have no certificates at all. Probably the duties would be quite as well performed. The officers of the corps have much to do with the tone of cadets and keeping up the discipline, and it is not well to have any laxity among them.

The certificate of the officer of the day might be retained. It is my belief that, in most cases, it is strictly regarded.

It is, in my opinion, the practice of cadets, when they hand in excuses for reports, to observe strictly the facts. It is not considered right, as in urging a plea of not guilty, to deny what cannot be proved. Should a cadet to this, there would be a strong feeling against him.

The rooms in cadet barracks are badly heated. Some of them are uninhabitable during the coldest winter weather. Frequently the gas escapes and there is a most disagreeable odor. The furnace heat gives me a headache, and I prefer feeling cold to having the register open.

As the cadets are now granted permission to keep pipes and tobacco, they ought to have more liberty to smoke. I think they should be per-

mitted to smoke in their rooms, excepting about the times of inspection. I do not think that there is as much smoking in the corps as there was before the permission to smoke was granted.

Cadet CHARLES E. CROSS, of the first class United States Military Academy, was then called, and gave the following answers to the questions proposed by the Commission:

I consider the course of study at the Academy sufficiently full to carry the pupil understandingly from one branch to another. I have heard of difficulties, but I think they are due rather to neglect on the part of cadets than to any faults of the system. There is not enough practical instruction in surveying nor in the use of instruments.

I could read French with facility when I left off with the study. With a little practice I think I should be able to speak it.

Of Spanish I know little. Our course was short, and we did not feel obliged to study. We were allowed to make constant reference to books in the section room. In no other branch are cadets permitted to do this or to help each other. It was due, to some extent, to the inexperience of the professor. It was his first year of duty in that capacity, and he did not know exactly what to do. During the first portion of the year there was a great want of capacity to govern exhibited by him. An example was finally made by putting a disorderly cadet in arrest, and after that I think the behavior of the section was better.

I look upon the study of Thackeray on Army organization as entirely unnecessary. It seemed to me to give a very vague idea of what it was intended to teach. The term of instruction cannot be shortened, in my opinion, without omitting studies that would be very valuable if properly taught.

The principal incentives to exertion are the desire to gratify one's friends, and to enter the scientific corps.

The system of reports and demerit I think a good one, well calculated to promote discipline. A cadet's denial of a report is not sufficient, unless the denial is confirmed by the reporting officer. Where there is a variance of statement, the report is not removed.

A cadet always feels bound in honor to state the circumstances just as they are, and would be cut by the other cadets for writing an incorrect excuse because he thought the reporting officer could not sustain his charge.

Cadet CHARLES E. PATTERSON, of the first class, was called, and gave the following answers in reply to questions proposed to him:

The amount of mathematics learned is sufficient, in my opinion, to enable one to master the subsequent courses. With a little practice I think I should be able to use astronomical and surveying instruments. The history of philosophy I regard as an unnecessary study. It would be quite sufficient to read carefully the text book. The study of moral science, in my opinion, might be profitably omitted. We had little practice in composition; none in reading. There was declamation once a fortnight, and during part of the year once a week. I think the fifth class course is too long.

I could read French pretty well when I stopped studying it. I could not read Spanish at all. We studied it but three months. There is now enough time given to Spanish, if it is properly employed. We were not required by the professor to study. Those who knew the lessons did not get better marks than those who did not. The method pursued in teaching was intended to be the same as that adopted in the French de-

partment, but I do not think the professor was competent to instruct cadets. He did not have sufficient knowledge of English, and was unable to make the cadets respect him.

The duties of sentinel sometimes interfere with the studies. If one has to recite at eight o'clock in the morning, the sentinel's tour, during the previous evening, interferes with the preparation of the lesson.

As one advances in the course, I think the studies are more interesting, more easily learned, and better retained.

The certificate of the officer of the day, so far as my knowledge goes, is generally regarded as obligatory. In writing excuses for reports, cadets feel bound in honor to tell the exact truth; and it would raise the tone of the corps if, when a cadet denies a report, the commandant would remove it, or have the matter investigated.

Cadet FRANKLIN HARWOOD, of the first class, was called and gave the following answers in reply to the questions proposed to him:

I think that many of the cadets find difficulty in the application of mathematics to the higher branches. There is not enough instruction in the practical use of instruments. With most of the sections the instructor adjusts and uses the instrument, whereas each cadet should be obliged himself to do it. I should not at present be able to obtain the longitude of a point.

I think that much of the English course is unnecessary and unprofitable, especially the history of philosophy and moral science. If a cadet has no knowledge of morals when he enters the Academy, he will never get it from his text book.

I could not read Spanish at the end of the course. The deficiency was principally due to want of time. The professor of Spanish is not a person calculated to inspire respect among the cadets. I think him competent to teach the language, but not to govern. If not required himself to take charge of a special section, he might be able to perform his duties.

I do not believe that any cadet would tell an untruth about a report. There is not an unfrequent practice among officers of reporting on suspicion, which creates much bad feeling, and I think is wrong. An officer will report what he suspects as an existing fact.

A cadet will sometimes positively deny a report when a question of fact is concerned, and his denial will not be received, nor will there be any investigation made. Cadets have the right to appeal, but there is so much trouble in getting justice that I believe it is generally better to let the matter drop.

The heating arrangements of the barracks are bad. A stench sometimes comes up from the flues, which one must put up with or suffer from cold.

There is food constantly on the mess hall table which I do not consider fit to eat. Sometimes the meat is almost rotten, and sometimes it is too tough to swallow. When complaint is made to the Commandant, the latter sends an officer to inspect. The officer is furnished a specimen of the fare by the purveyor, and often pronounces it good. I do not know that the cadets have had any opportunities of seeing what has been presented as a specimen of the food supplied to them. We would be glad to pay more and have a better table.

Cadet P. H. O. RORKE, of the second class, was called, and gave the following answers in reply to the questions proposed to him.

Have completed the French and Spanish courses. Could read French

with facility when I stopped studying. I cannot speak it; studied it for a year and a half; Spanish for a year. Read Spanish with as much ease as French; can speak it a little; can write a little in both languages. The same method, generally, was employed in teaching both, though in Spanish there was rather more practice in speaking. About the same interest was taken in one language as in the other. If anything, the Spanish was liked a little better. I regard the professor of French as a thorough and excellent instructor. What was learned of Spanish, apart from the pronunciation, was learned, in a great measure, without the assistance of the teacher. He did not inspire respect, for the reason that he had no capacity to govern. I think he would be reliable as an instructor so far as his knowledge of the language goes. He speaks it fluently, but cannot speak English well enough to be able to give in all cases full explanations. I have seen mistakes made which he has not corrected, but none apparently from ignorance. The same thing will occur in the other section rooms.

The principal incentive to study is to get into a scientific corps.

There should be fewer reports given, in my opinion. Many offenses might be more severely punished, but frequently irregularities occur that it would be sufficient to correct at the moment. For some delinquencies an entirely disproportionate number of demerits is given. A cadet, I have learned, received four reports, giving him sixteen demerits, because a small piece of paper was seen projecting from beneath his tent floor. He was unconscious of the offense for which he had been four times reported, until it was finally pointed out to him by the reporting officer.

Many questions of veracity have arisen where no investigation has been made, and a stigma has rested upon the cadet. Great dissatisfaction and indignation has been occasioned by this among the corps.

Cadet A. H. DUTTON, of the second class, was called, and answered as follows to the questions proposed to him:

Can read French fluently; speak it a little. Cannot read Spanish with the same fluency; can speak it a little. Had studied French before entering the Academy. Consider the system of instruction in that language better here than I had ever seen it elsewhere.

There were deficiencies in the professor of Spanish, arising, I think, more from his want of knowledge of the English than of the Spanish language. Have attributed any failures to correct cadets for mistakes to inadvertence or nearsightedness. There was less discipline than in the other section rooms, and rather too familiar conversation between the instructor and the cadets, which I thought was owing to the professor's kind disposition and inexperience. I have seen cadets use their books in his section room more than in any other. I think we might have learned to read as well without the instructor, but not to pronounce.

The Commission, at 4 p. m., adjourned to meet at 10 a. m. to-morrow.

J. C. IVES, *First Lieut. Topographical Engineers,*
Secretary.

WEST POINT, NEW YORK,

August 8, 1860.

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

Communications were received and read from General J. G. Totten,

Corps of Engineers, and Lieutenant-Colonel R. C. Buchanan, Fourth Infantry, in reply to the questions proposed in the circular letter of the 18th ultimo (appended and marked I¹ and K¹); also from Captain J. G. Benton, Ordnance Department, instructor in ordnance and gunnery at the Academy, in reply to the questions proposed to the professors and instructors (appended and marked L¹); also from Professor H. L. Kendrick, United States Military Academy, in reply to the circular letters of the 18th and 23d ultimo (appended and marked M¹ and N¹).

Cadet WILLIAM R. JONES, of the second class, was called, and gave the following answers to the questions proposed by the Commission:

My mathematical knowledge was sufficient to enable me to master the course of philosophy. There was only one equation which I now recollect that I could not work out. The chapter on molecules we were not required to work out. It was not considered as exactly belonging to the course, but intended to supply some knowledge that would be wanted in the studies of optics and acoustics. I learned little about practical surveying, though, I think, with what I know, I could soon acquire a knowledge of the use of instruments.

I do not think there is any profit derived from the study of practical ethics, or the book on prefixes and suffixes.

There is no study that I would have cared to pursue further excepting that of the languages. When I left off the study of French I could read and write exercises with facility. Spanish I can read tolerably well only. For the first six months I studied it pretty hard, afterwards not so much; probably because it was not required. The method pursued in teaching French is better than any I have seen in the instruction given in languages elsewhere, and could be applied with advantage in the Spanish department. Already it has been adopted there to some extent. I can speak very little Spanish; could pursue the study now without a teacher. I think there is not enough reading practiced in that department, and that the books are not well selected. Nearly all that I learned, excepting the pronunciation, I learned in my own room.

The professor does not seem to be able to command the respect of the cadets. As to his knowledge of Spanish I am not competent to form an opinion. We had a special lesson for each day, which was very easy, and which he could readily have acquired. There was something in his manner that permitted more familiarity than was ventured with the other instructors. It was not, however, carried very far. The method of making out the standing appeared to me to be the same as that followed in other departments. It was more the custom in the Spanish section room than in any others to resort to different means of getting assistance in regard to the lesson, which probably arose from the want of discipline. Elsewhere it was not generally considered fair for cadets to look at their book.

Cadet RICHARD M. HILL, of the second class, was called, and gave the following answers to the questions proposed to him:

Could read French with facility when I had finished the course; Spanish not so well, though I paid more attention to the latter study than to the former; do not consider that the instruction given was as good; the professor has not a sufficient knowledge of English to be able to impart clearly the principles of the Spanish language; he would frequently be asked questions which he would find difficulty in answering; he cannot speak English well; of his knowledge of Spanish I am not a competent judge; there is not much interest taken in his course; it is easy to get

along without study, owing to the professor's leniency ; with a different mode of instruction and a different instructor, I think there would be an interest taken in the study of the language. The professor did not command respect in his professional capacity ; we thought him a gentleman, and he tried hard to make the young men respect him, but it did not seem to be in his power.

Cadet ALFRED MORDECAI, of the second class, was called, and answered as follows to the questions proposed to him :

I think that in the philosophical course there is an excess of analytical work, and that one is apt to lose sight of the principles in devoting so much time to the analysis.

Studied French not quite a year and a half, and learned to read it with facility ; can speak it to some extent ; Spanish I can neither read nor speak so well ; the method of instruction in the latter is not so systematic as in the other ; the professor's knowledge of English was defective, and I thought his knowledge of Spanish also ; he would occasionally explain the idioms, but, not being able to do it in Spanish, would resort to French ; there was little interest taken in his course ; it was not necessary to pay much attention to it ; there was a lack of discipline, arising, I think, from want of respect for the professor and want of confidence in his ability.

Reports are sometimes given on suspicion when the reporting officer does not know the report to be correct. For example : at a drill, the instructor, at a distance, noticing some irregularity, will order the file closer to report for it ; the latter, not knowing certainly the delinquent, will report the person whom he most strongly suspects. I believe that cases are very rare where an excuse contains an incorrect statement ; cadets look upon it as a solemn obligation to state the exact facts. Instances have occurred where a cadet has believed himself insulted by an officer, and has asked the Superintendent to forward his complaint to the Secretary of War, but has heard nothing further about the matter.

Cadet LUCIEN D. SANDIDGE, of the second class, was called, and answered as follows to the questions proposed to him :

Can read French with tolerable facility. Think the method of teaching it the finest I have ever seen. Spanish I do not read so well. The course is not as thorough. Think the professor deficient in knowledge of elementary English. Regarding the principles of the Spanish language, I always thought his explanations sufficiently clear. There did not appear to me to be any very marked difference in the discipline as enforced in the Spanish, and in the section rooms in other departments. I did not perceive much disposition to slight the study. The professor was, I think, sufficiently exacting. His demeanor was always polite. Perhaps there was more familiarity with him than with the other instructors. The cadets would probably look at their books and get assistance from each other more in his section room than in any other. I think they learned about as much as they would have done under any other teacher.

Cadet LAWRENCE S. BABBITT, of the second class, was called, and answered as follows to the questions proposed to him :

Most of the course of philosophy is understood by the cadets. The chapter upon molecules I do not think that any of them clearly comprehend, though different parts of it have been explained. The studies are generally pursued in such a way as to be impressed upon the mem-

ory. I think that there is too much analysis in the philosophical course, and that it is calculated to make one forget principles in the study of the equations and formulæ.

Had studied French very little before entering the Academy. Can read almost any French book now understandingly. Cannot read Spanish so well. With half a year's more study, think I could read it as well as I do French. Could continue the study without the instructor. There is nothing deficient in the French department. In the Spanish there was an inclination of the cadets to take advantage of the professor's good nature. There was no intention on his part to be too familiar with the section, but there was something odd in his manner, and discipline was not sufficiently enforced. I think he required a little more knowledge of Spanish to be able to explain the idioms well. He sometimes did this with reference to French; seldom with reference to English. The cadets do not treat him with much respect.

As first sergeant, I have no unpleasant relations with cadets because I am compelled frequently to report them. I do not know of any objection to the officer of the day being compelled to sign a certificate that he has performed all of his duties. The certificates of superintendent of subdivision and corporal of the guard are looked upon, I think, rather as matters of form. The duties would be performed by a conscientious man as well without them as with them.

Cadet JOHN F. O'BRIEN, of the second class, was then called, and gave the following answers to the questions proposed to him:

Had studied French, but not Spanish, before entering the Academy. Can read French with facility, and Spanish about as well. Spent a summer in Cuba, before commencing the Spanish course. Was more interested in Spanish than in French, and had more desire to learn it. There was not, I think, enough reading in the course. The professor would explain the idiomatic peculiarities of the language with reference both to the English and to the French. He can make himself readily understood in English, and knows enough of that language, I think, for a Spanish teacher. I never saw any deficiency in his knowledge of Spanish. He was more lenient than any others of the professors or instructors. I think this arose from his kindness of heart, and a general desire to please.

At 3 p. m. the Commission adjourned to meet at 10 a. m. to-morrow.

J. C. IVES, *First Lieut. Topographical Engineers,*
Secretary.

WEST POINT, NEW YORK,
 August 9, 1860.

The Commission met at 10 a. m.

Present, all of the members excepting the Hon. M. Cochrane. The secretary present. The proceedings of yesterday were read.

A communication was received and read from Professor Horace Webster, of the New York Free Academy, supplementary to the communication received from him on the 3d instant, in reply to the questions proposed by the Commission (appended and marked O¹); also from Professor A. E. Church, of the United States Military Academy, proposing, at the request of the Commission, certain modifications of

the circular usually addressed to the candidates for admission to the Academy. (Appended and marked Pl.)

Professor W. H. C. BARTLETT, of the United States Military Academy, was called; and, in reply to questions proposed by the Commission, stated as follows:

Cadets are less proficient now in mathematics than they were many years ago. Sometimes they will not have enough knowledge of calculus to solve ordinary problems. I myself, at the examinations, had voted these individuals proficient in the mathematical course. They had probably crammed for the occasion. Even in the highest section I sometimes find deficiencies. The remedy for this, I think, would be to give more time for reflection and mastery of the lesson, by allowing a certain interval of repose after the recitation. The cadet should have plenty of time to become proficient in the course; and at the end of the year there should be a very rigid examination; and all should be discharged who did not come up to the standard. A general examination, at the time of graduation, upon the whole course of studies might be advisable.

The subject of physics has undergone of late many modifications. In the present system of instruction it is necessary first to embody certain general principles that apply to all the branches of physical science in a short course, and afterwards deduce results for each of the special departments. The first section is prepared to work out all of the results. The conclusions are, however, given in language easily understood; and the lower sections receive them without being themselves able to demonstrate their accuracy. These conclusions, so far as is possible, are illustrated by experiment. I do not think that the test to which a cadet's mathematical knowledge is subjected is severer than it was formerly.

It does not seem to me that there is quite the same competition for class standing that there was at one time. Those near the head study hard to be first; those near the foot, to avoid being dismissed; those between, merely enough to keep along, increasing their efforts temporarily if they find they are falling too low. There does not appear to be much study merely to acquire a knowledge of the course.

My impression is that assignments to corps have been sometimes made without reference to academic standing or personal preference.

In making the appointments to the Academy one modification appears to me to be desirable. It is that each Congressman should nominate a certain number of candidates, who should be examined by a competent board, with a view to the appointment of the best qualified. This would secure good ability and ample proficiency. I would not increase the requirements for admission.

If the different methods of instruction were pursued with the highest and lowest sections, instead of their being made to learn different amounts of the same books, it might operate to the injury of some cadets, who would otherwise be able to rise to the upper portion of the class. It would then be almost impossible to transfer individuals from the lower section to the higher. Excepting for this, I should consider the geometrical method of teaching the philosophical course better adapted to the lowest sections.

The text-books in natural and experimental philosophy have been prepared expressly for the cadets of the Military Academy. They have a threefold purpose—mental discipline, a corresponding knowledge of the subjects of which they treat, and a confirmation, in the minds of

the students, of their previous mathematical course. The text on mechanics, the groundwork of the whole, begins with the simplest elements of physics, and such general facts in regard to the action of forces as are furnished by experience, and which comprehend all special cases of nature. These are fully discussed, and a mathematical formula, an expression of the laws by which forces are connected with matter, is deduced. From this point the work is purely deductive, and presents to the student a connected discussion, instead of a series of detached propositions, as in most texts upon the same subject. This formula is made a never-failing source whence may flow, through the channel of mathematical analysis, and in the natural order of sequence, all the laws of matter, and the *rationale* of all physical phenomena. The method is natural, simple, and comprehensive, and it saves to the student a great deal of useless labor, by avoiding the necessity of new statements and demonstrations on the presentation of new cases and new data. It requires, to be sure, more labor from the student at the beginning; but that labor is rewarded by ample returns in the increasing ease with which he may progress, after mastering first principles, and in the facility with which the text may be reviewed.

The totally new aspect given, within a few years, to that branch of natural philosophy embracing what were formerly called the "imponderables," viz, light, heat, and electricity, made it necessary, in my judgment, to add to the *mechanics of solids* and of *fluids*, that of *molecules*; and it is proposed to replace the present text book on acoustics and optics by another, embracing, in addition, heat and electricity, which shall be purely deductive, and little else than corollary to this new branch of mechanics.

The work on astronomy is constructed upon the same plan, as nearly as may be, and no change is proposed for it.

The condition of the department of natural and experimental philosophy requires improvement in regard to the location of its lecture and recitation rooms. These are, at present, in separate buildings, removed from one another about seventy-five yards, and both in the second story. It is desirable that they should be brought under the same roof, and made to communicate directly with each other. All of the apparatus, except that used in the course of practical astronomy, is deposited in the lecture room. In the course of recitation in the section room, points of difficulty are constantly arising, of which the solution would be greatly facilitated by a simple illustration with some suitable piece of apparatus; but, at present, we are deprived of this advantage by the arrangement of which I speak. But an hour and a half daily are allowed for the recitation of each section, and to pass from the section to the lecture room, and back, every time a necessity arises, would consume so much time, and involve so much inconvenience, as to deter from any attempt to employ the apparatus in the way I suggest, and which would greatly enhance its practical utility. To remedy the difficulty, I would suggest either to appropriate the rooms now occupied as offices, on the ground floor, just under the lecture room, for purpose of recitation, as originally intended; or to erect a new fire-proof building for lectures, recitations, and the accommodation of all the apparatus, including the instruments for practical astronomy. The latter plan, if executed with special reference to the objects here specified, would be greatly preferable. All the rooms could be made to occupy the same floor, and to communicate so directly as to bring every instrument and piece of apparatus within immediate reach of the instructor. The building should not be more than one story

high; and I am more inclined to this plan, because of the injury to which our fine astronomical instruments are now exposed, from the dust caused by the cavalry and artillery drills, which take place directly to the north of their present location, and in the range of the prevailing summer winds. A judicious location of the new building would not only avoid this objection, but would also relieve us from the noise, which seriously interferes with the use of the instruments during a considerable portion of the year.

The building would cost, I suppose, from ten to twelve thousand dollars.

First Lieutenant RUFUS SAXTON, fourth artillery, assistant instructor in artillery at the Academy, was called, and, in reply to questions proposed by the Commission, stated as follows:

In the artillery course, the school of the driver is not taught to the cadets. With twelve lessons, besides six for review, I think I could teach the tactical course. There are subjects of the highest importance for an artillery officer to understand, some of which are not taught in the artillery department, and others not at all at the Academy; for example, the manner of preparing a mortar bed, and certain details of interior management of siege and sea-coast batteries; also, many matters connected with harness, its care, management, &c. There is no practice in firing hot shot. We have casemate drills, and throw shells from the sea-coast and mortar batteries. I think it would be well to introduce another book on artillery. There is one by Colonel Delafeld, in manuscript, which I think could be studied to great advantage.

To make the course complete, and the cadets thorough artillerists, I should think the recitations ought to extend throughout the whole of the second class year, every other day, alternating with ethics. This would include what is now taught in the department of ordnance and gunnery. I have no assistance in teaching artillery tactics.

The manufacture of arms, projectiles, ammunition, &c., is a necessary part of an artillery officer's education. I think it would be a great advantage to unite the corps of ordnance and artillery. There should be a new organization of the latter corps, and it should have an officer at its head. There are not now more than enough of artillery troops to garrison our permanent fortifications.

It would be advantageous for an artillery officer to be an engineer and *vice versa*. In building forts a knowledge of artillery is necessary, and in selecting positions for batteries an artillery officer should have a knowledge of engineering. I do not think that the charge of a company would necessarily interfere with scientific investigations.

There should be at the Academy a different set of horses for cavalry and artillery drills. It is dangerous to use the same animals at both. There is too much work to be done. Horses frequently fall down from weakness, and lately narrow escapes from serious accidents have frequently occurred. It would be a measure of economy, instead of at once breaking down the horses, to get a larger number.

Here the Commission, at 3 p. m., adjourned to meet at 10 a. m. to-morrow.

J. C. IVES, *First Lieut. Topographical Engineers,*
Secretary.

WEST POINT, NEW YORK,
August 10, 1860.

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

A communication was received and read from Professor D. H. Mahan, of the Military Academy, in reply to the questions proposed in the letter of the Commission, of the 18th ultimo. (Appended, and marked R¹.)

First Lieutenant J. M. SCHOFIELD, first artillery, was called; and, in reply to questions proposed by the Commission, stated as follows:

Have been assistant professor of philosophy at the Academy for about four years, and an instructor in that department for a year longer. Have generally had charge of the first and last sections, though occasionally of the intermediate ones.

My experience is, that about one half of each class are unable to understand the principles of mathematics applied in the course on mechanics, without some assistance from the instructor. The first section, as a general rule, have no difficulty in working out nearly all of the formulæ. The deficiency in attainment is generally, I think, from lack of ability. Many have not power to master the mathematical and higher courses with any amount of study. The principles are generally understood by all. It is only upon the more difficult portions of the analysis that the lower half fails. There are no principles taught in the course on natural philosophy which may not have a direct application in the study of engineering. There are a few problems which could not be thus applied, but the study of these does not occupy more than three or four days.

The analytical system of mechanics, that now taught at the Academy, is infinitely preferable to the other. It is the only system that affords a foundation upon which future progress can be made. Not more than half the cadets can master it, but it should not be made less difficult. It imparts the proper amount of knowledge, and is a good test of merit. In it the general formulæ and principles are established, and from these all the results are deduced. By the synthetical method there is a separate demonstration for each problem. If the instructor is careful there is no danger that the cadet, while engaged upon the analysis, will lose sight of principles.

The standard of the lowest sections is, in my opinion, quite below that of an engineer. I know of no remedy for this but to elevate the character of the material which we receive into the Academy. It is not possible to bring one-half, perhaps not one-quarter of those who now enter to the required degree of proficiency. Competitory examinations before the appointments are made would help the matter. An examination on the present preparatory course would be a partial test of ability. I think a boy's capacity for mathematics might be judged of by a searching examination upon the principles of arithmetic. The examination for admission, at present, is wanting in thoroughness.

The difference in the proficiency of the highest and lowest sections runs through all of the departments. It is less in those not scientific. Since I was a cadet I think in some of the departments there has been a change for the better, and in others for the worse. I think the standard in mathematical proficiency has somewhat fallen. In the ethical course I believe the general knowledge of cadets has been improved. They understand languages better. In the departments of

Spanish and French there appears to be about an equal proficiency at the examinations.

The five years' term has its advantages and disadvantages. The English course has been much improved, but I think greater benefits might have been derived from a five years' course than there have been. There has been too great an increase of study, an over multiplication of books, particularly in the ethical department. The increase of the term has occasioned a certain weariness among the cadets, so far as I can judge from conversations with them. I have talked mostly with members of the late graduating class, who were greatly disappointed at having to stay the additional year, as they had expected to graduate twelve months sooner than they did. Members of other classes have complained of the long term of study, accompanied with severe discipline, isolation from society, &c. These complaints have generally proceeded from the most indolent.

Sufficient opportunities are given for practical applications of the course of natural philosophy. The use of instruments, particularly astronomical instruments, is taught. I think one half of the class would be able to use instruments in the field. There are a good many whom it would be almost useless to attempt to teach. Every member of the first section makes one set of observations for time, latitude, and longitude, and observes once with the sextant, altitude and azimuth instrument, and zenith telescope. The latter instruments are adjusted and set by the instructor. I spent a week in instructing that section, and think that each member, with a little practice, would be able to take up the instruments and observe. One height is measured by each person with the barometer, and they are taught how to handle the latter properly. I think that a greater amount of time might be employed profitably in practice with field instruments; but it would be difficult to find leisure within the year, and it would scarcely be worth while to give the instruction to more than a few of the class.

It would be of little service to have an observatory and an astronomer at the Academy except to assist officers of topographical engineers. Corresponding observations can be obtained at other observatories. West Point is about as good a place for an observatory as can be found in the eastern portion of the United States.

The course of artillery at the Academy is sufficiently extensive, but I think other text books should be introduced. Theroux, being in French, is not well understood. The course embraces all of the elementary instruction required in artillery, except in regard to the theory of projectiles, where it is deficient. It would be desirable to have it extended in this respect; but this could not be done with the present term of study. It would be well if artillery officers could study after graduating, but my experience has been that they have no time. Without such subsequent study the elementary instruction is in a great measure lost.

The general amount of attainments among the graduating class is, I believe, greater than when the term of study was shorter. More rigid examinations would raise the standard of proficiency in the different studies. At present, examinations are held before committees, and all doubtful cases are re-examined before the entire Academic Board. The re-examination is very thorough. This plan has been in operation for three or four years. I doubt whether a general examination upon the whole course would be beneficial. It would cultivate a system of cramming. Some, skillful at this, would do well, while others would fail. Frequent examinations by the instructor upon the preceding

lessons would enable him to ascertain very nearly the real proficiency of cadets. In the study of philosophy, it is always understood by the sections that the whole of the fundamental principles previously acquired form a part of every lesson.

I believe that the text books now in use are admirably adapted to the purpose for which they were intended. The book on optics and acoustics requires to be modified, and a new one is now in course of preparation. It is not required of cadets to understand the mathematics of the chapter on molecules, but only the principles. There is not time for the former. I think the geometrical method would be better suited than the analytical to the capacities and acquirements of the lowest part of the class.

The system of instruction by lectures would be a good one, if the object were only to instruct; but I think it would diminish the amount of application to study, and render it impossible for the instructor to ascertain the relative proficiency of the pupils. The present system may be too much one of examination, and perhaps the two might be combined to a certain extent advantageously.

Class standing is the great incentive to study. I think there is a desire to be head, without any particular object as to the corps in view. The first fifteen have the most emulation. After that there is comparative indifference till you get near the foot of the class, where they study in order not to be dismissed.

Here the Commission, at 2 p. m., adjourned to meet at 10 a. m., on Monday.

J. C. IVES, *First Lieut. Top'l Eng'rs, Secretary.*

WEST POINT, NEW YORK,
August 13, 1860.

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Foot and the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

Communications were received and read from Capt. H. F. Clarke, Subsistence Department, and from Capt. W. B. Franklin, Corps of Topographical Engineers, in reply to the questions proposed in the circular letter of the 18th ultimo. (Appended and marked S¹ and T¹.)

The following letter was received from Col. Justin Dimick, Second Artillery, through whom the circular of the 18th ultimo, addressed to the staff of the Artillery School at Old Point Comfort, had been forwarded:

HEADQUARTERS ARTILLERY SCHOOL,
Fort Monroe, Va., August 10, 1860.

SIR: I have the honor respectfully to return the sealed letter addressed to the "Staff of the Artillery School," which has just been received, and respectfully to suggest that the address be changed to "The Captains of the Artillery School," whom I can call together and prevent the communication for such action as may be required of them; but the staff of the school can only be assembled by the commandant of the school for the transaction of business which he may lay before them, and their proceedings subject to his remarks.

I am, sir, very respectfully, your obedient servant,

J. DIMICK,

Lieut. Col. Second Artillery, Bvt. Col., Com'g Art'y School.

Lieut. J. C. IVES,

Secretary Military Academy Commission.

The Commission directed that, in accordance with the suggestion of Colonel Dimick, the address of the communication referred to should be modified as to read "The Captains of the Artillery School."

An examination was then made of the programmes of the present course of study, and that proposed by the board recently convened by the Secretary of War; after which, at 3 p. m., the Commission adjourned to meet at 10 a. m. to-morrow.

J. C. IVES, *First Lieut. Top'l Engrs, Secretary.*

WEST POINT, NEW YORK,
August 14, 1860.

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Foot and the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

A communication was received and read from Col. Richard Delafield, Corps of Engineers, Superintendent United States Military Academy, in reply to the questions proposed to him by the Commission in their letter of the 18th ultimo. (Appended and marked U¹.)

Also from the Rev. J. W. French, chaplain and professor of ethics, &c., at the Academy, in reply to the questions proposed to the professors and instructors. (Appended and marked V¹.)

After which, at 3 p. m., the Commission adjourned to meet at 10 a. m. to-morrow.

J. C. IVES, *First Lieut. Top'l Engineers, Secretary.*

WEST POINT, NEW YORK,
August, 15, 1860.

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Foot and the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

Maj. ALFRED MORDECAI, Ordnance Department, being present, in reply to questions proposed by the Commission, stated as follows:

I think the regulation, respecting the knowledge of arithmetic required as a qualification for admission to the Academy, sufficient, but it should be rigidly carried out. I would not require more than a good knowledge of the operations of arithmetic, and a facility of working in figures. There should be a thorough knowledge of elementary grammar and geography—such an amount of each as is ordinarily learned by boys of thirteen or fourteen at school. I believe it would be well for candidates to be permitted to enter only between the ages of sixteen and twenty.

It is important, I think, that the Superintendent should have a knowledge of all the sciences taught at the Academy. Administrative talent is essential, and this, I think, officers of engineers usually possess to as great an extent as officers of any corps in the Army.

There has been a disposition, it seems to me, of late, to attach too much importance to practical instruction. The Academy should not be a school of practice. The ability to receive practical instruction is the principal thing to be acquired. It is necessary, however, that a certain

amount of practical military training should run through the whole course. Elementary instruction must be given in each of the branches of the service. The graduate should have some knowledge of all the instruments that he may be required to use. It would not be well to separate the theoretical from the practical instruction entirely. It can scarcely be expected that we shall have schools of practice, though they would be of the greatest value, for with our small Army, whenever an emergency occurs, troops will be taken from any position where they are available.

As the Commandant gives instruction in all arms, he should be liable to be selected from all—should be at least a major, and, if possible, have performed distinguished service. I should look to him rather than to the Superintendent for the infusion of military spirit into the cadets.

If the professors should be selected from the Army it should be allowed to detail them from the grade of captains. It would be well to take them from all corps. They would probably be selected, as a general thing, from the scientific corps, but there might be persons in other corps whom it would not be well to exclude. Their period of service at the Academy I think should not be restricted. The changes in detail would have to be left to the discretion of the President. I do not think there should be a separate academic corps, nor do I think it would be necessary to have supernumerary officers attached to the Army to supply the wants of the Academy. Assistants may be changed at stated periods, but should not all be changed at once. The position of first assistant should be filled by selection, and not by regular promotion.

I do not consider it necessary to bring every graduate to the standard of an engineer. I would not reject all who do not come up to this standard, and thereby exclude from the Army many young men who would make excellent soldiers, but I would graduate the course of instruction to a considerably greater extent even than at present is done. I would give a portion of the class a more elementary training in the different studies; would have distinct text books and systems of instruction for the lowest sections, omitting the highest branches of mathematics, and teaching them the philosophical course by the geometrical instead of the analytical method. Everything that is learned I would have learned thoroughly. It has been objected that, if this were done, there would be an early separation of the class, and that some, who from want of early advantages might make a poor start, would be debarred from reaching a position which they could have afterwards attained were all pursuing the same books and system. I think, however, that a young man, if he had sufficient ambition and capacity, could in many cases acquire the higher course. It was not uncommon at one time for cadets to qualify themselves to enter a higher class than that which they at first belonged to. As a rule, I do not think that mathematical ability is an indication of fitness for the military service; but I do not believe that a young man without decided mathematical talent would make a good engineer.

Army officers may, upon some occasions, be called upon to perform certain duties of engineers, but generally they would be of so simple a character that every one with a military education would be competent to fulfill them. Where a higher knowledge of engineering is required, there would be a wide field for selection among the artillery officers, who would be supposed to have pursued the higher course of study. Even if an individual were *incapable* of mastering the scientific studies required to make a good engineer, I would not, for that reason, exclude

him from the service. If the graduating standard were made very high, the number of graduates would be so much reduced that the country would not be willing to bear the expense of their instruction.

If the five years' course is retained, I think the last year should be devoted more to practical instruction, and the studies should be of a lighter character; but I do not think we could approximate to the schools of practice of Europe. The duties taught in those must be learned mainly after graduating. I do not think, even if time could be given, that it would be well to combine the schools of application with our academic course. In Europe, the duties of reconnaissance, sketching, &c., are usually taught at those schools. In all the military schools of Europe drawing and sketching are considered of the greatest importance for staff officers. They begin by sketching models, set before them, from different points of view; then copy drawings, figures, &c.; then make topographical drawings, and afterwards landscapes.

It is my opinion that it is best to assign the cadets to corps when they graduate. I would not recommend any system of transfer from the line to scientific corps. It would be very desirable to have all of those who are appointed to the latter corps serve for some time with troops. It would be well for artillery officers, in their turn, to serve on ordnance duty at arsenals, &c. I have always believed that there should be no ordnance officers below the rank of captain, and that artillery lieutenants should be detailed in turn for ordnance duty. Engineers, also, should have some experience in that duty. Generally speaking, it is advantageous for higher corps to serve with all of the lower; but not so necessary for lower corps to serve with the higher.

The present course requires elimination to bring it within a four years' term. In making such an elimination I would omit Spanish altogether; limit the course of practical engineering and astronomy, use of instruments, &c., and reduce the course of English by leaving out—having in view a higher standard of qualifications for admission—grammar and geography. Moral science might be entirely omitted. The exercises in riding could be reduced. More time should be given to French. The defects usually charged to graduates of the Academy arise, I believe, from a want of knowledge of the English language.

I think that four years of incessant confinement and study at West Point are sufficient; and that, if a better knowledge of English is required, it should be had before entering the Academy.

A communication was received and read from Professor J. de Janou, of the United States Military Academy, in reply to the questions proposed to the professors and instructors. (Appended and marked W¹.)

A statement was received from the Commandant of cadets of the character of fare furnished on each day at the cadets' mess hall, and the amount of provisions consumed at the mess hall during the months of May and June, 1860. (Appended and marked Y¹.)

At 3.30 p. m., the Commission adjourned to meet at 10 a. m., to-morrow.

J. C. IVES, *First Lieut. Topographical Engineers, Secretary.*

WEST POINT, NEW YORK,
August 16, 1860.

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

Rev. JOHN W. FRENCH, chaplain and professor of ethics, &c., at the Academy, was called, and in reply to questions proposed by the Commission, stated as follows:

The text books used in my department ought to be as precise and accurate as possible, disencumbered of needless material, with neither repetition nor contradiction in different parts of the course. Those now in use are liable to all the above objections, and I know of none others that can be purchased that would be free from them. The books that would be adapted to the wants of this Academy would not be suitable for use elsewhere, and *vice versa*, moral science, for example, should be taught here like any other science. There should be the closest adherence to principles. The writers on that subject are apt to depart from general principles, and to take up local questions of the day and to advance particular views of their own. Dr. Wayland, the author of the text book now in use at the Academy, states particular views in regard to the social contract, war, common schools, charities, and some theological questions. His book has been in use for many years, and should not be abandoned, unless the change were certain to be advantageous. A portion of the work was at one time eliminated at the suggestion of one of the superintendents, but subsequently restored. Recently an elimination has been again made. I proposed at one time to substitute Hickock's book for Wayland's, but the last chapter was thought liable to objection.

In connection with the studies of one's duties, I would propose to lay open to the pupils the facts without the theory. The lecture system is the true one, where one mind, keeping up with the progress of investigation of the day, imparts its ideas and knowledge to other minds. There are difficulties, however, attending this system, and in its place might be substituted the study of a series of text books, embodying the lectures; presenting them, so to speak, in a hardened form. My idea is that the ethical department should be allowed to do what other departments have done. The intellectual excellence and reputation of the Military Academy in certain departments have been greatly promoted by the fact that in those departments the professors have been allowed to bring up their subjects in their own way, without interference from below, above, or around them; while, at the same time, the subjects have neither been changed nor expected to change.

With the material now admitted to the Academy, I think it would be practicable to raise the standard of admission so far as to require an elementary knowledge of grammar and geography.

[The professor here, at the request of the Commission, gave a detailed explanation of a portion of the text books, employed in his department, of the system of instruction pursued, the arrangement of the programme, &c.]

I do not think that the pupils have been at all overburdened by the ethical course, except in peculiar cases, which have been at once remedied. The difficulty of carrying out the programme I have proposed has been somewhat increased by obstacles that have existed during the past year in the way of having certain exercises added to the course.

The method of writing compositions, by which the pupil is left to select his own subject and handle it in his own way, is, I think, defective. The writer is apt to throw together a mere collection of truisms. The plan of seating the pupils at desks and giving them ideas to paraphrase is a good one, but to take a thought and put it into various forms requires previous knowledge of language, synonyms, &c.

I do not think it would be well to put all of the English studies into the last year. The cadets require the assistance of these studies in earlier parts of the course. The study of etymology, for example, in the first year, gives a readiness in acquiring French and Spanish. Suppose even that the grammar has been studied, and the derivation of words understood, and the basis thus laid, during the first year, of a knowledge of language, and then the course of English be dropped until the last year, law, logic, geography, history, composition, practical ethics, &c., would be crowded into that year, and while important studies would have to be slighted, the course during other years would lose the advantages that would be derived from contemporary English studies. In regard, too, to the cultivation of style, taste, &c., more can be done in a little time, where there is a continuity of application from day to day, than where there is a great amount of concentrated study. It is different with the pursuit of the exact sciences.

I do not know but that the assistant instructors might teach in different departments to advantage. In the ethical department special care should be taken to select instructors with a view to their peculiar fitness for the position, their moral qualities, &c.

It has been my constant endeavor to urge upon my assistants to increase, so far as possible, the number of written exercises to be prepared by the cadets, in their study of grammar, &c.

I do not consider that the Military Academy can be said to rest upon a permanent basis till the subjects of study are fixed by law. In regard to the methods and details of instruction, I should leave large discretion to the academic authorities. The changes that have been passed through, the unsettling of the minds both of instructors and pupils that have resulted, have shown the necessity for some fixed system. I imagine that there are few institutions in the world, of a similar character, that are *subject* to such sudden and entire changes in the branches taught. I think that Congress might even prescribe the particular years during which specified studies should be pursued, but without restricting the professor in the selection and preparation of his text books. A possibility of change could be left, by providing that at the expiration of a certain number of years, say ten or fifteen, a board should be convened to examine the course, and propose any desirable changes which might then be made either by Congress or by the Executive.

As regards the effect of the discipline upon the morals and tone of the cadets, I think the present system is a good one. It is better to have no espionage, to rely upon their honor; but if they commit wrong and deserve punishment, let the punishment certainly follow. It would not be well, I think, to have the regulation restored requiring professors and instructors to report all offenses that they may happen to witness. The present system is an admirable one, much better than that pursued formerly. If a professor were now to see any gross violation of morals he would call attention to it. Where morals are not concerned, I think the authorities may see too much. There should be no appeal, it seems to me, from the Superintendent to his subordinates, such as is now permitted.

As regards the duties of chaplain, I should say, generally, that they should not be connected with too many professional occupations. On the other hand, if the chaplain has not some intellectual labors, the position may be made the object for constant competition by persons of different denominations. It has been thought, too, by some practical men, that the professional duties prevent him from being so

absorbed in his theological studies as to become fanatical, or from attempting to give himself prominence by a course intended to impress those of his own persuasion. If the chaplain were permanently post chaplain, and had no professional labors, he might arrange a system of parochial duties to occupy him, and the arrangement would not be liable to the above objections.

The duties of the position are now excessively arduous. They involve an immense amount of labor, for which some relief should be afforded. The ethical course might, perhaps, be divided, though the different parts are so intimately connected that it would be difficult to separate them. It might give the required relief to have an assistant chaplain to administer parochial duties.

I have observed nothing in the cadets, after they have been here four years, to indicate a weariness of study arising from the length of the course.

The present rule, limiting the age for admission to the Academy, I think, on the whole, the best that could be adopted.

The system of rewards for good conduct and high standing is now so great that its effect might, perhaps, be weakened by introducing many others. I believe, however, that it would have an excellent influence to bestow, for superior merit in particular branches, such as composition, for example, medals to be worn as a part of the uniform. These would incite young and military minds to the highest efforts.

First Lieutenant S. V. BENÉ, Ordnance Department, assistant professor of ethics, was called, and in reply to the questions proposed by the Commission, states as follows:

The course of ethical studies is too much expanded. Four years are now devoted to it. These could be reduced to three by suppressing the studies of logic, prefixes and suffixes, practical ethics, and the greater part of moral science, and the history of philosophy. The course of rhetoric, I think, should be reduced one-half.

The fifth class should be confined to the study of grammar and geography, and reading and writing; the latter from dictation. The fourth class may be taught rhetoric, moral science, and history; the first class, international, constitutional, and military law, and such portions of history as were not mastered by the fourth class and the time will permit.

I think the study of moral science and practical ethics does more harm than good. The cadets dislike it, consider it a task, and in the end conceive a disgust for the subject that will disincline them from ever taking it up for examination in future.

A very defective plan is followed in teaching composition. I would suggest, for the fifth class, mere reading for the pronunciation, &c., and writing from dictation to correct spelling, punctuation, &c. The fourth class should be exercised in writing, in their own language, some paragraphs dictated by the instructor. This plan would also give the latter a more sure and safe opportunity of marking each student according to his deserts. The substance of prefixes and suffixes could be taught to the first class by a few lectures. Geography and history should be taught as completely as possible, but subsequent study must of course be depended upon for a thorough knowledge of these subjects. It would result in the greatest benefit to give the cadets practice in writing by preparing memoirs of campaigns.

For the benefit of the institution the standard of admission should be raised, but Congress is the best judge of the standard of common-

school instruction in different sections of the country, and their judgment must guide in this matter.

In respect to deficient cadets, legislation should fix the decision of the Academic Board as final.

At 3 p. m. the Commission adjourned, to meet at 10 a. m. to-morrow.

J. C. IVES, *First Lieut. Topographical Engineers, Secretary.*

WEST POINT, NEW YORK,
August 17, 1860.

The Commission met at 10 a. m.: Present, all of the members excepting the Hon. Mr. Cochrane; the secretary present. The proceedings of yesterday were read.

First Lieutenant JOHN T. GREBLE, Second Artillery, acting assistant professor of ethics at the Academy, was called, and in reply to questions proposed by the Commission, stated as follows:

Have been engaged in teaching logic, history of philosophy, and moral science. Enough time, I think, is given to these studies. A majority of the cadets appear to have studied grammar before entering the institution, though few, I think, have a clear comprehension of it. I believe that the study of prefixes and suffixes is advantageous. It facilitates a knowledge of the meaning of words, and takes the place, to a certain extent, of a knowledge of Latin and Greek. It is not necessary to have studied those languages to understand it. Some take an interest in it, and some do not. It is a new method of instruction, and its introduction of course attended with difficulties.

I think the study of logic necessary; mathematics cannot supply its place. Logic applies to all reasoning, while mathematics deals only with facts; and I believe rather cramps than expands the mind.

I have not seen any distaste exhibited for the study of moral science. The recitations are generally very good. The course of practical ethics needs some modification. At present there is a certain amount of repetition in it. It would not be so well to teach it from lectures. Cadets learn much better from books. It would be, I believe, a decided injury to the Academy to omit the ethical course.

Professor D. H. MAHAN, of the United States Military Academy, was called, and in reply to questions proposed by the Commission stated as follows:

The courses of mathematics and mechanics, as now taught at the Academy, are sufficient to enable cadets proficient in them to master the course of engineering. In my own case, I found that I was able to acquire the courses of applied mechanics without difficulty at the school of Metz, after having passed through the mathematical and mechanical courses at this Academy, and the latter courses have been of late years much improved.

I cannot say whether the studies of mineralogy and geology are carried sufficiently far. They now follow the study of engineering, though I think they should precede it. The preparation in the course of chemistry I have found to be adequate.

Have no supervision over the instruction in practical engineering, but believe that it would be better for the instructor in that department to be the assistant of the engineering professor, in order to have a co ordinate instruction, and avoid repetition. An economy of time

would thereby be promoted. The cadets have as much practical instruction in engineering as can well be given at this place. The course of military engineering now pursued here is as extensive as that given at Metz, the special school in France for that object, and much more enlarged than at the minor schools. It would be very well for all the graduates, if possible, to attend for a year, or for a few months, at least, a school of practical field engineering where they could become familiar with all of the operations that they might subsequently be required to perform, but there is not time for such instruction at the Academy. The engineering knowledge most necessary to graduates, is generally, I think, retained. That part of the course is a favorite study with most cadets.

An important change has recently been made in my department, by transferring from it the study of grand tactics, strategy, &c. The instruction in attack and defense is still retained. Castrametation in its more restricted sense, belongs to my course; in its more extended branches to the course on strategy. The whole subject of sea-coast defenses must come into my course. The operations of campaigns form a part of the other. In teaching field fortifications, I refer to their applications in campaigns; but this does not interfere with the other course, nor occasion repetition.

The frequent changes made in the detail for Commandant may render it difficult always to have in that position a person competent to teach the subjects of strategy, military history, &c. If the Commandant has not been a reading man, nor prepared by previous study, the course would suffer. The officer who would make the best commandant, might, from having been on active service, without opportunities for study, be deficient in the proper requirements for an instructor, and find himself, on assuming his position, so trammelled by other duties as to be unable to master the course, and be qualified to teach it thoroughly. I have, therefore, thought that it would, perhaps, have been better to keep the course of strategy, &c., in the department of engineering. The professor of engineering has a more permanent position; his duties are cognate, and he would almost necessarily be qualified to give instruction in this course.

The application of mechanics to machines is not taught to the whole class. It was attempted to teach it to all, and if the five years' term is continued each section will study it; the higher sections by the analytical and the lower by the geometrical method.

It will sometimes appear that a cadet has not sufficient knowledge of mathematics to pursue the study of mechanics properly; sometimes that he does not know enough either of mathematics or mechanics to master the course of engineering; but the cases are exceptional, and arise from different causes—from peculiarities of mind—from an imperfect method of study—from a habit of memorizing the lesson—from not having the text books to refer to, or neglecting to resort to them. From proficiency in mathematics one can nearly always foresee the proficiency in engineering.

My course includes instruction in artillery, so far as it relates to attack and defense of places, and, therefore, embraces certain details regarding the description and caliber of guns employed, the projectiles used, &c. Engineering and artillery are too intimately connected in such operations to be separated.

The system of conducting the examinations by persons not connected with the Academic Board would be liable to some defects. It would be apt to confuse a young man, and not give a fair idea of his proficiency.

I have sometimes thought that a final examination upon the general principles of the whole course would be a surer test of proficiency and a fairer way of determining graduating standing than the present method. I proposed once such a system to Colonel Thayer, but he thought it was open to some objections, and the matter was dropped.

The present text books are superior to those formerly in use. They are clearer and much easier to study; but I am not sure that this has not lowered the mental standard of cadets. They can readily acquire their lessons so as to recite upon them, and, by cramming, make good recitations, without acquiring a permanent knowledge of the principles of the course.

The progress of improvement is kept pace with, and the course correspondingly expanded by providing models, drawings, &c.

The subjects of study at the Academy, and the amount of time to be given to each, should, I think, be fixed by law. Whatever can be regarded as well established should be a matter for legislation. Nothing essential should be left to the caprice either of the Secretary of War, of the Chief Engineer, or of the professor. Changes could be made, if desirable, at the recommendation of a permanently organized commission. The professor should arrange a course, select text books, &c., which could be submitted for the approval of the commission and the Secretary of War. The course once arranged, should not be susceptible of change, except by the concurrence of the Academic Board, the commission, and the Secretary of War. I would not confine the commission exclusively to the Army.

The relative power of acquiring by the algebraical and geometrical methods depends upon the mind of the individual. I think the algebraical method is, as a general rule, more easily applied by the cadets than the other. Six out of seven will select it for solving a problem. As far as development of mind is concerned, I think the geometrical method best. A geometrical diagram is of the greatest assistance in the understanding of the applied mathematics, as, for example, in statics. I believe that the present course at the Academy is about the best we could have. It is a mixed method of instruction.

The defect of our course, as a whole, is, perhaps, that we are rather too abstract, and that there is not sufficient *application* of the theory and principles that are taught.

[The professor here read the following quotation from a report by Poisson, taken from page 41, "Rapport sur l'enseignement de l'École Polytechnique," by a commission appointed in July, 1850:]

"Cette année, les examens m'ont paru beaucoup plus faibles que les années précédentes. Le tiers des élèves n'ont fait que des réponses à peu près nulles ou insignifiantes. En général, ceux qui parviennent à démontrer les propositions *n'en entendent cependant pas bien le véritable sens*; ainsi, pour n'en citer qu'un exemple, beaucoup d'élèves démontrent le principe des forces vives, sans même pouvoir en donner un énoncé exact, et surtout sans en comprendre l'usage et l'application aux machines. C'EST UN DÉFAUT CAPITAL DE L'ENSEIGNEMENT, QUE LA SIGNIFICATION DES THÉORÈMES, QUI DEVRAIT SERVIR, DANS L'ESPRIT DES ÉLÈVES, AUX DÉMONSTRATIONS, EST, AU CONTRAIRE, DE QU'ILS SAVENT LE MOINS. Dans la mécanique, IL NE FAUT RIEN LEUR DEMANDER EN DEHORS DES FORMULES, ET RIEN NON PLUS SUR LA MANIÈRE DE LES CONVERTIR EN NOMBRES. ILS NE SE FONT AUCUNE IDÉE DES DIVERSES QUANTITÉS QU'ELLES RENFERMENT; j'ai déjà plusieurs fois signalé ce grave inconvénient." * * *

"Mon opinion bien arrêtée, maintenant, est que LES MATIÈRES DE

L'ENSEIGNEMENT EN MÉCANIQUE ET EN ANALYSE SONT TROP ÉFÉDUES relativement au peu de temps que les élèves peuvent consacrer à cette étude, et que de là vient LE PEU DE PRÉCISION ET DE RÉALITÉ DES CONNAISSANCES QU'ILS ACQUIÈRENT, ET LA RAPIDITÉ AVEC LAQUELLE ILS OUBLIENT CE QU'ILS ONT APPRIS. *Mais c'est au conseil d'instruction à prendre l'initiative dans les changements qu'il serait utile de faire, et je propose d'appeler son attention le plus tôt possible sur cet objet, le plus important et le plus urgent dont on puisse s'occuper.*"

I consider these views of M. Poisson to some extent applicable to parts of the analogous courses at this institution.

As to the selection of Superintendent, there are some advantages in confining it to the Corps of Engineers. One corps is held directly responsible for and its credit depends upon the fitness of the incumbent. The head of the corps will of course endeavor to select the best man for the position. The Corps of Engineers has been made up from the highest order of talent. Unless the same guarantees were given that are had at present (that the best individual would always be selected), and the choice kept free from extraneous influences, I would not advise a change. The field of selection might be enlarged, so as to embrace the three scientific corps, the two Corps of Engineers and Ordnance, without the above objections. No one is likely to go into those corps but a graduate of distinguished scientific acquirements, and none other would be so likely to appreciate the relation between the scientific course of instruction and the military.

I would confine the selection of professors to officers of the Army. Have always thought it a mistake to compel officers appointed to professorships to resign. The schools of Europe have a great advantage over us in this respect. This Academy is a military, and not a scientific institution. A captain, or even a lieutenant, might be selected, who should remain a certain time and then go back to the Army. There should be a fixed time, longer than which an officer should not be allowed to remain. I would exclude all citizens from professorships. The very distinguished qualifications which alone would seem to designate some particular person as particularly qualified for the position it would not be essential for a professor here to possess. Even the professorships of languages could, I think, be well filled from the Army.

There is no course at the Academy carried further than is necessary to make a good engineer, though I believe that they are carried far enough.

The selection of the assistants should be left, as far as possible, to the professors, who should be held responsible for the proper instruction. This is necessary to insure harmony in the department. If the professor's first choice cannot be detailed, then let the second be, and so on, but no one should ever be appointed who has not been applied for. All of the assistants should be on the same footing as regards pay. Their duties and responsibilities are the same. They should be notified that they are to be detailed as assistants six months or a year before they are required to report. Almost every graduate of good mind will make a good instructor.

The "four years' rule" I consider an admirable one. It gives sufficient time for improvement and acquisition, and does not allow officers to be here so long as to lose their soldierly feeling. A large number of the graduates are re-educated, in a measure, by this system of frequent rotation.

I think that quarters at the post should be selected according to Army rank. Everything, indeed, at the Academy should be governed

by the ordinary Army rules. This is the only system that will give general satisfaction.

I think it was a wise measure to take from the Superintendent the power to order a professor to instruct and hear the recitations of a particular section. The class is much better and more uniformly taught if the professor does not have a special section. It is unfair to the sections whom he does not instruct, while at the same time he is debarred from training and getting a knowledge of his assistants. On the same principle it would be as well to assign the colonel of a regiment to the charge a particular company.

Our experience is opposed to the practice of restoring dismissed cadets to the Academy. Few cases turn out well. The decisions of the Academic Board, particularly, should never be reversed. In respect to the sentences of courts-martial, there may be a great latitude. The questions involved are different. The order allowing delinquent cadets to appeal from the Superintendent to the Academic Board has much the same effect as to permit a soldier to appeal from his captain to the lieutenant. It is, I think, entirely subversive of military discipline.

The system of counting demerits in making out class standing operates well. It improves discipline, and gives the cadets habits of subordination and order essential to the education and character of a soldier. Without it, I think matters at the Academy would fall into a loose train. The recent order striking off demerit in cases of trial by a court-martial where the accused is found guilty is wrong, and founded upon a misapprehension. Demerits are not given as a punishment, but from the record from which a cadet's standing in conduct is made out. The record is not accurate when it does not take into account the grave offenses which a cadet may commit.

I know of nothing left undone to maintain a high tone and moral standing at the Academy. I know of no changes in organization or regulations that would improve them.

The present method of assigning graduates to corps is perhaps the best that could be devised. Without something for young men to work up to, there would be little ambition, and the standard would at once be lowered. I think that staff officers should serve with troops for a while after graduating.

There would be no objection to combining into one corps the two Corps of Engineers and the Ordnance Department, except that where specialties are concerned it is well to keep up special organizations. The English plan of combining the artillery and engineers has not worked well.

If a competent person could be obtained, I think it would be better to have but one professor for the Spanish and French departments. There would then be a uniformity in the methods of instruction in the two languages that would result in advantage to both departments. There would be no more labor required of the professor than now devolves upon him. The professor of mathematics has two classes to superintend. For the purposes of this school, I do not regard it as indispensable that the professor of French or Spanish should be a native of France or Spain. The sections have been as well taught by officers of our own country as by foreigners.

Captain J. G. BEXTON, Ordnance Department, instructor in ordnance and gunnery at the Academy, was called, and, in reply to questions proposed by the Commission, stated as follows:

The present organization and arrangement of my department is, I think, a good one. The sciences of ordnance and gunnery should be

taught by one person. There is a close relation between the subjects. To the ordnance officer it is indispensable to understand the principles of the science of gunnery. The theory of projectiles belongs to all arms to some extent, and need not therefore, necessarily, be taught by an artillery officer. The subject of gunnery is intimately connected with the use of small arms, and, if given to special departments, would have to be divided among cavalry, artillery, and infantry officers, which would be impracticable.

I have considerably extended the course in my department. It goes now more into detail in regard to the construction, proof, and preservation of small-arms, swords, &c. The class is taught also to calculate the strength of powder. The analytical formulæ for this are somewhat intricate, but not more than cadets can master.

The text books have heretofore been deficient. I have been endeavoring to compile one that would be suitable. The subject of projectiles is treated of in the philosophical course, theoretically. I propose to treat it more practically. At one time the course was taught in thirty lessons. Forty-five are now given. The course requires sixty. The subject of the use of artillery, breaching, &c., might be transferred to the artillery course.

Here the Commission, at 3 p. m., adjourned to meet at 10 a. m. tomorrow.

J. C. IVES, *First Lieut. Topographical Engineers,*

Secretary.

WEST POINT, NEW YORK,
August 18, 1860.

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

Professor H. L. KENDRICK, United States Military Academy, was called, and in reply to questions proposed by the Commission, stated as follows:

The subject of ores is treated of in my course. They are referred to in chemistry, and more fully discussed in mineralogy. In chemistry the principles of reducing metals are taught. The lessons are much expanded in the section room by conversation rather than by a formal lecture. I think it would be well to extend the course on metallurgy somewhat. This would make it sufficient for the mass of officers. Officers of ordnance and artillery would require to go further, and this the knowledge obtained at the Academy would enable them readily to do.

The present course of geology would not enable an officer to give more than a very general idea of the geological character of a region traversed by him, not more than to determine whether it was volcanic, stratified, or unstratified, &c. He would not be able to recognize the particular epochs of the strata. It would be well to extend the course, so as to enable the graduates to describe a country, to collect specimens, to distinguish what is valuable from what is worthless, &c. Some study of human anatomy, physiology, hygiene, would be desirable, if there were time for it. An officer should have a general idea of the structure of a man. It would assist him in selecting recruits. A knowledge of the simple elements of surgery and medicine would also be of importance.

It is very frequently the case that an officer will be without a surgeon for a long time, in charge of considerable numbers of men, constantly exposed to being wounded, as well as to being taken sick.

Additional time would be required for instruction upon this subject. The subjects now taught are already condensed as much as possible.

There are parts of my course, I think, sufficiently interesting to be regarded as more of a recreation, and less of a task, than other courses.

In teaching geology, I give some oral instruction in physical geography, and subsequently the latter subject should be taken up separately.

Peculiar text books are required for the use of cadets. I am now arranging material with reference to the preparation of a work on chemistry. The present text book on mineralogy is all that could be desired. The changes in the science of geology are so rapid that it would be more difficult to prepare a proper book upon that subject for cadets. I think that chemistry and the course of mineralogy and geology should be taught in separate years, and I would have the recitations in the former take place in the forenoon.

The course of agricultural chemistry is an application of the knowledge acquired in other parts of the course. The subject is of great use to officers in selecting sites for posts, supervising the post gardens, &c.

There is no text book on electrics suited to our purposes, and I have had extracts taken from a chemical treatise by Miller, which, with apparatus and conversation in the section room, serve to impart an idea of the course. It would be well to have a double set of apparatus, one to be handled by the cadets. The subjects of heat and thermatics are not very fully treated of in the text books, but the want is made up by conversation. Meteorology is not professedly taught, but constantly comes up in connection with other subjects in my course.

I do not think that graduates who enter the line of the Army, as a general rule, pursue their studies. I attribute this, not to weariness produced by excessive study here, but to the want of incentive to exertion. The officers of the medical corps, who are subjected to examinations for promotion, keep up their studies. Other officers, whether they study or whether they do not, arrive at the same result. If a system of examinations for promotion were established, I do not think that they should be very severe. Many officers serving on the frontier have no time for study, but gain much practical knowledge; while those at eastern stations acquire much knowledge that the others do not, but might be much less competent to take command of troops in active service. It would be difficult to determine the relative proficiency of different officers. It is often quite impracticable for those at remote posts, when weary after a hard scout, to attend to their various garrison duties and devote any time to study. Promotion should take place by proficiency only, and in order of seniority, and officers of the respective arms should alone be trusted to decide upon the proficiency of the candidate for promotion in their particular arm. Examinations should take place, I think, only as high as the rank of captain.

At one time I thought it would be well to enlarge the field of selection for Superintendent. Since serving in the Army I have changed my views. It is an advantage to have one corps responsible for the proper administration of the Academy. The system has certainly worked well thus far, and I do not believe that there will be any difficulty in getting good Superintendents from the Engineer Corps hereafter. I think it well that the Superintendent should have the rank and pay of colonel. To give the Commandant the rank and pay of lieutenant-colonel is not, in my

opinion, desirable. The rank and pay of a professor of mathematics would be sufficient. In the case of the Superintendent, there is a feeling in the Corps of Engineers that would prevent anything like strife for the position; but the position of Commandant, being thrown open to the whole Army, will be the object of incessant competition, so long as it is accompanied by such high rank and pay. I would not have any position at the Academy made the object for gaining which political influence would be brought to bear.

I doubt if it would be good policy to exclude from the Academic Board all persons not coming from the Army. It would occasion much bad feeling, with no corresponding advantage.

I do not think it would be an advantage to transfer any part of the course on ordnance and gunnery to the artillery department. The cavalry and infantry might claim a share of the course on equal grounds with the artillery.

The present organization of the tactical department I consider a good one. I would have the position of Commandant filled, in rotation, by officers of the artillery, infantry, and mounted corps. I would substitute riding for many of the infantry drills, and take riding out of study hours. There is now more time than necessary devoted to infantry exercises; and I think there is little benefit in interrupting the studies by riding, while there are many evils. The cadet has to dress for the drill, attend it, and change his dress upon his return. This occupies the best part of two hours; and the riding upon the plain, and the discussions about horses, &c., during the study hours, distract the attention of the cadets from their books.

I believe that every professor and instructor would consider it his duty to take notice of any grave offense on the part of a cadet, such as intoxication, immoral conduct, &c. It is the duty of all officers to report such things, and a special regulation is not required to make them do so. Minor matters—neglects of military duty, visiting, &c.—I think a professor should not be called upon to notice.

There would probably be a clashing, if the same instructors were to serve in different departments. The professor can now require his assistant to study the course; but if the latter had two branches to teach there might be a difficulty in exacting the due proportion of attention that should be given to each.

I think it would be better for the professors to retain their Army commissions, and remain at the Academy for a limited term of years, not to exceed ten or fifteen. There might be isolated cases where it would be desirable to retain a person longer; but the rule should be fixed, and not departed from.

It is inconvenient to me, and, I suppose, to all the other professors, to have the assistants changed; but the present system of rotation is good for the Army. The instructors rejoin their respective corps with studious habits, which exert a beneficial influence upon their brother officers; and the prospect of being detailed for duty at the Academy will stimulate to the continuation of study after graduating.

The Commission, in company with Professor Kendrick, again visited and examined the chemical lecture rooms and apparatus, the mineralogical and geological cabinets, &c.

The following estimate was presented by Professor Kendrick of the changes and additional material required in his department, with the probable cost of the same:

For a new geological room for recitations and working cabinet, with fixtures, in old riding hall (25 by 40 feet)	\$500
Room for electrical apparatus, in old riding hall.....	250
Improvements in present chemical room, and for heightening room	300
Plates and charts, illustrating chemical and geological phenomena	300
Additional geological, mineralogical, and paleontological specimens for working cabinet	1, 000
Necessary additional apparatus in chemistry and electrics ...	1, 000
Rearrangement of room now used as geological section room, so as to fit it for instruction in practical photography, and for materials for same	700
Mineralogical and geological cabinet of exhibition, illustrating those sciences generally, and particularly as seen in America, including changes and fixtures in rooms	22, 000
Total amount.....	26, 050

Brevet Second Lieutenant E. B. CARLING, Second Artillery, acting assistant instructor of the Spanish language, was called, and, in reply to questions proposed by the Commission, stated as follows :

Have been assistant instructor in Spanish for the past year. Professor Agnel was professor of Spanish when I was a cadet. I learned then to read the language with facility. Had studied it a little before coming here.

Taking the average of the cadets, I think, they succeed very well in their study of Spanish. Have had the second and fifth sections to instruct. The latter section, of course, did not attain so much proficiency. Had no opportunity of judging of the relative proficiency in Spanish and French of the class that I instructed, excepting in the examination hall, when, I think, they showed as much knowledge of one language as of the other. The methods of instruction are similar, except that in French Professor Agnel has introduced a tabular system that has not been adopted in teaching Spanish. My class were instructed by that system in both languages. I think the principles of a language are better learned by it than by any other that I am acquainted with.

I think that the cadets can generally read Spanish about as well as French. They pronounce, I believe, as well as it is possible, considering the time devoted to the study, and their not having any intercourse with persons who speak the language. The professor's pronunciation appears to me to be very good. He visits my section nearly every day. Is always careful to correct errors in exercises or in pronunciation. There is no more difficulty in preserving order in the Spanish than in the other section rooms.

There is nothing I would suggest as an improvement to the present mode of instruction, except to introduce the tabular system, provided such system were perfectly arranged. I think that the majority of the class learn enough to enable them to pursue the study without an instructor after graduating. It would be desirable, however, to have more time, and to teach the language more thoroughly. I suppose that from one third to one-half of the class now learn to speak well enough for the ordinary demands in a Spanish country.

The cadets are generally interested in the study of Spanish, and regard the study as important, knowing that they will have occasion for a knowledge of the language when on the frontier. It would be

better, if possible, to have Spanish studied during the last year, that graduates might leave the Academy with the knowledge fresh in their minds.

At 3 p. m. the Commission adjourned to meet at 10 a. m. on Monday.

J. C. IVES, *First Lieut. Topographical Engineers,*
Secretary.

WEST POINT, NEW YORK,
 August 20, 1860.

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Cochrane. The secretary present.

A communication was received and read from Major Alfred Mordecai, Ordnance Department, in reply to the questions proposed in the circular letter of the 18th ultimo. (Appended, and marked Z¹.)

Professor P. DE JAXON, of the United States Military Academy, was called, and, in reply to questions proposed by the Commission, stated as follows:

I think that the time for the study of Spanish should be extended to embrace both the second and third class years, or, at least, that lessons should be given every day during the third class year, in order to allow cadets to write compositions, have more practice in reading, of which there is now very little. The method I pursue, that of Velasquez, seems to me best adapted to give a knowledge of the idioms, &c., considering that we have not time to converse much. There would be no advantage, I think, in having the study of lessons in the section rooms instead of in the cadets' own rooms. Have had no difficulty with my section in exciting an interest in the study of the language. I understand French. Have resided for many years in Paris. Often have occasion to explain the differences in the Spanish and French idioms. The knowledge of French is of great assistance to the cadets in studying Spanish. There is not much conversation in Spanish, except in my own section room. My assistants have some diffidence in conversing with cadets. In my section room, after a short time, I always speak Spanish, and require the cadets to reply in the same. I should think that at least half of the class, when they graduate, would be able to converse well enough for all ordinary purposes in a Spanish country. The pronunciation is generally very good. I teach the pronunciation as laid down by the Spanish academy at Madrid.

All of my assistants have been officers who have graduated at the United States Military Academy. Generally they have been instructed by myself.

I do not think that Don Quixote would be well adapted for a textbook with such young pupils. It is too full of difficult idioms. Gil Blas would be an excellent book either for the French or Spanish course. It would not be well to have it in both. The second perusal would be tedious, and not attended with as much advantage as the study of a new book.

It is desirable to have the assistant speak the language well, but I would prefer to have my assistants Army officers, if they understand Spanish pretty well.

Have had no occasion to report any cadet for disorderly conduct during the past year. In all the Spanish section rooms the behavior is good.

Even in the lowest sections I think sufficient knowledge of Spanish is acquired to make it worth while to give the instruction. All can read, write to some extent, and have sufficient knowledge of grammar, pronunciation, &c., to enable them readily to pursue the study without further instruction.

Professor de Janon was notified by the president of the Commission that in consequence of some statements made to the Commission respecting the department of Spanish, several cadets had been called up and questioned regarding the course of study, discipline, &c., in the Spanish department, and the names of the cadets so questioned were mentioned and their testimony shown to him. He was also asked if he desired that any cadets, other than those already called up, should be summoned before the Commission, and replied in the negative.

First Lieutenant RUFUS SAXTON, Fourth Artillery, assistant instructor in artillery, was called, and, in reply to questions proposed by the Commission, stated as follows:

There is enough light artillery practice to enable a graduate to drill with a light battery, although I think it would be well to have the course extended. The heavy artillery course is not sufficient. Cadets should be taught to fire hot shot and have practice in breaching, if there were sufficient time for it.

I do not think that artillery exercises in the latter part of the day disqualify from study during the evening; but, on the contrary, enable one to study to better advantage. The course of artillery, ordnance, gunnery, &c., is, I think, pretty much the same as when I was a cadet. There has been, I believe, a general expansion as regards most of the course of study at the Academy. The study of theoretical engineering, particularly, is pursued much further and to great advantage. The same may be said of the ethical course, which is now very interesting and greatly improved. I do not think that there is any part of that course which should be omitted or curtailed. The great deficiency among Army officers has been as respected their ethical instruction.

Instruction in anatomy and surgery would be attended with great advantage. Have sometimes been for months, with a command, without a surgeon. Have no doubt but that a knowledge of those subjects would often be the means of saving life. It would be well also, I think, for cadets to understand the chemical properties of food.

Colonel RICHARD DELAFIELD, Superintendent of the United States Military Academy, was called, and, in reply to questions proposed by the Commission, stated as follows:

I do not believe that it is practicable to train cadets so that *all* shall be qualified to be engineers. It would not be our policy to exclude all that are even incompetent to become engineers. The Academy is no longer a school of engineering, but an institution for the purposes of national defense. It is a great advantage, however, to have all of the cadets, even the lowest sections, pursue the same studies. Our Academy, I think, in this respect, has advantages over any other military institution.

Officers of the line, educated here, can throw up field works, make reconnoissances, and perform all the simpler engineering duties. An officer of infantry could take command of a battery of artillery, in the event of all of its officers being killed. He might not do it as well as

the artillery officer, but still he could do it. Each cadet is now brought to the highest standard that he is capable of attaining, but it would not be well to have the standard requisite for graduating made too high. The demands of our service do not require it.

During peace I would confine appointments to the Army to graduates of the Academy and to non-commissioned officers who are able to pass the requisite examination for promotion. The latter furnish a most useful element to the service. I would not have them, however, promoted to a high rank in the Army without further examination.

Here the Commission, at 3.30 p. m. adjourned to meet at 10 a. m. to-morrow.

J. C. IVES, *First Lieut. Topographical Engineers,*
Secretary.

WEST POINT, NEW YORK,
 August 21, 1860.

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

A communication was received and read from Captain H. G. Wright, Corps of Engineers, in reply to the questions proposed in the circular letter of the 18th ultimo. (Appended and marked A².)

Colonel DELAFIELD, being present, in reply to questions proposed by the Commission, stated as follows:

In regard to the course of studies, &c., at the Academy, I am of opinion that Congress should legislate to the effect that the course of studies during a peace establishment of the Army should be arranged for four years, and that no cadet should be permitted to remain upon the rolls of the Academy for a longer period than five years; that the programme of studies and exercises for a four years' course, adopted by the Academic Board in 185-, submitted by the undersigned, with some slight changes, be adopted, and remain subject, as at present, to modifications by the Academic Board until the creation of a permanent commission, to be authorized by law, which shall thereafter be the only authority competent to make permanent changes or alterations in the programme of studies and exercises; the commission to consist of—

1. The Superintendent of the Academy, who shall be appointed from the Corps of Engineers, as at present.

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| 2. Two professors of the Academy, | } To be detailed by the |
| 3. One instructor of a practical department, | |
| 4. One officer of the Corps of Engineers, | } inspector of the |
| 5. One officer of the Topographical Engineers, | |
| 6. One officer of the Ordnance Corps, | } Academy. |
| 7. One officer of artillery, Chief of the Artillery School of Practice, or | |
| 8. One officer of infantry, | } To be detailed by the |
| 9. One officer of the mounted service, | |
| | } chiefs of those arms. |
| | |
| | } To be detailed by Command- |
| | |
| | } ing General of the Army. |
| | |

Numbers 4 to 9, inclusive, to be officers, not below the rank of captain—graduates of the United States Military Academy—who shall have served in that or higher rank not less than eight years in their respective arms of service; two to be changed after each regular meeting of the commission, and in rotation; this commission to convene at West Point after its appointment and examine the general programme heretofore referred to, making such changes and alterations as it may

consider expedient; which shall go into effect and be conformed to during the next succeeding academic year, commencing on and after the annual June examination—the commission to arrange the time for each subject, and approve of the detailed programme drawn up and compiled by the professors and instructors of the respective departments of instruction and exercise; no changes nor modifications to be allowed in these detailed programmes, except with the approval of the commission; this commission, as a general rule, to convene every two years to examine into and revise their previous labors, correcting and altering such parts as it may be considered expedient, and as experience may prompt, to have changed; the text-books, to carry out the detailed programmes of the course of instruction, to be approved by the Superintendent and inspector of the Academy, upon the recommendation of the chief of the department, and to be then adopted until the first meeting of the commission, when the text-books must receive the approval of that body. Special meetings of the commission to be held for the revision of detailed programmes upon the requisition of the Superintendent, approved by the inspector of the Academy; in such case the Commanding General of the Army to order the officers to report to the Superintendent of the Academy to form such commission; but the special meetings not to occur oftener than may be necessary from new discoveries in science or art of war, or new text-books requiring a modified detailed programme of certain subjects. The code of discipline now in practice, amended as pointed out by the Superintendent in his answers to interrogatories six and seven, should continue to be enforced, subject only to future revision and alteration by the commission at its regular meetings, provided that no alterations or additions should be made, except on subjects and points laid before the commission by the Superintendent, approved by the inspector of the Academy, and that the alterations and additions when made should be enforced and carried into effect by the Superintendent.

I think that the inspector of the Academy should be appointed as at present.

If a five years' course of study be adopted, I would recommend the programme given in my reply to interrogatory No. 8, subject to alterations and changes by a commission, as above stated.

The number of cadets should be sufficient to fill up the vacancies in the Army, in all of its arms and corps, excepting those filled by non-commissioned officers of the Army, and give a surplus to every arm of service equivalent to the number detailed for duty at the Military Academy, and provide for other contingent details, as courts-martial, recruiting service, and such duties as withdraw officers from their companies. The excess over the present authorized number should be made up by appointing two at large from each State, at the nomination of the Senators in Congress, and in the manner proposed for appointing from Congressional districts, in the answer to interrogatory No. 3.

I would recommend that the duties of the Academic Board, specified in paragraph 10, Academy Regulations, should be omitted, excepting to examine cadets—as proposed in the answer to interrogatory No. 1—to decide upon their merits, grant diplomas, and recommend for promotion, in accordance with the academic qualifications; after which precedence and promotion in corps and arms should be regulated as described in the portion of the answer to interrogatory No. 4, relating to examinations for promotion.

Artillery practice, and the tactics of that arm for field, siege, sea-coast, garrison, mountain-howitzer, and all other batteries, should be

placed under an artillery officer independent of the commandant of cadets, unless that officer belongs to the artillery arm. The practice of artillery should be under the instructor of ordnance and gunnery in preference to being under the commandant, when the former is an artillery officer.

Rejections of candidates for admission increase and diminish in number, not apparently conforming to any rule, varying as the general average of talent varies in classes from year to year. Some years the classes are very inferior, and others decidedly superior in average talents.

The system of examination at graduation is, at present, I think, as good as any that could be suggested; also, the method of granting diplomas for the several corps. The Academic Board arranges the students in their relative order of proficiency, each of the latter possessing a proportion of knowledge applicable to each arm of service, but not, in each and every case, qualifying the cadet for any corps in the Army.

The Academic Board, with the proposed alterations of introducing a commission to discharge a part of its duties, and the changes noted in the Superintendent's replies to interrogatories, would be able, I think, to discharge with advantage its remaining duties.

With regard to the detail of assistant professors, by making transfers from company to company, and by having supernumeraries, obtained by increasing the number of cadets, the choice of the professor can always be secured.

An officer is not allowed to report a cadet upon suspicion. The report must be based upon the reporting officer's own knowledge and belief of the facts, as he sees and hears, or thinks he sees and hears. He may sometimes be mistaken. Should an officer, however, give a report at hazard, not being confident of the fact, but leaving the cadet to deny it if not true, I would, if the case came to my knowledge, ask that the officer should be removed from the Academy. The system of excuses is indispensable. As I have stated before, where there is a conflict of statement, regarding a question of fact, between the reporting officer and the cadet, the matter is investigated; but the denial of a reporting officer's statement, months after the latter has been made, cannot be examined. The explanation or denial must be given by the cadet while the particulars are fresh in the mind of the reporting officer. As a general rule no cadet is compelled to write an excuse for any offense whatever.

I was Superintendent between the years 1838 and 1845. During that period there were two instructors of artillery. These gentlemen, Lieutenants Keyes and Knowlton, greatly improved and advanced the course, introduced Theroux, inaugurated light-battery drills, instruction in other than field batteries, much of mortar practice, &c. Lieutenant Knowlton also compiled lithographed note-books for the use of the cadets. When I returned, in 1856, I found many branches improved by Captain McClellan, who had built and armed the mortar and siege batteries. Lieutenant Gibbon was then instructor of artillery, and was preparing, when I came, a revision of Major Porter's text-book, prepared by the latter as a substitute for Theroux. Lieutenant Gibbon, being a zealous officer and a hard student, gave great attention to changes in artillery, growing out of rifled ordnance, fuses, &c., and afterwards published a work on artillery, embracing all of the modern improvements in that arm.

Some time after my return a change was made, giving the instruction

in artillery practice to the commandant, and the theoretical and scientific course to an instructor of ordnance and gunnery. The officer detailed for this position has been, and is, introducing improvements into the artillery service. He has now in press a text-book on the whole subject of his course, designed to bring the subject down to the present date in the theory and practice of artillery, as well as of small arms, including the principles embraced in the manufacture of bronze and iron guns. The manufacture of powder has also become a matter of more importance, in relation to its sudden or progressive combustion, and, together with the experience of our own country and Europe in increased range, penetration, and accuracy attained by the rifled principle applied to all arms, is, as I understand, embraced in the text of the work referred to, a part of which was used for instructing the cadets during the past academic term. A ballistic pendulum and an electro-ballistic apparatus have also been put in position and used under the present instructor of ordnance and gunnery. Both of these were about to be introduced under his predecessor. The instruction in ordnance had been very deficient, and the present instructor, belonging to the Ordnance Department, has been laboring to give cadets the scientific instruction in ordnance duties, only to be obtained, I believe, from an ordnance officer. The course of artillery has not gained materially, but the course of ordnance has been greatly improved by having an officer in charge of that special branch.

I think there is no advantage in having the instructor of artillery one of those who are specially charged with the discipline of cadets. It is no more necessary in his case than in that of the instructor of cavalry.

In infantry there have been of late years great improvements. The old system of marching was defective. In marching by a flank the troops would spread out, and the proper distances be greatly increased. The Duke of Orleans introduced the simple principle that men in ranks should have such space as not to incommode each other, and to perform all the exercises with arms when moving with the utmost rapidity. Colonel Hardee, the present commandant, has compiled a system of tactics upon that principle.

A still further improvement has been lately introduced into the infantry arm, at the special instance of the Secretary of War, in teaching the cadets *the use of small arms*, instead of, as formerly, confining the instruction to the manual of the musket. The service has been confided to an officer of the Army, who has succeeded in teaching three classes, and is now instructing a fourth in the use of the bayonet as a measure of attack and defence, and in firing with small arms. He is also charged with fencing, and use of the sword and military gymnastics, including swimming. So soon as all of the classes have been taught the use of the bayonet, it may then be introduced as a part of the daily manual on drills and parades, instead of, or, if necessary, combined with, parts of the present manual.

The course of cavalry has made great improvements, and now includes veterinary science and art, a most useful study to all officers who have anything to do with horses.

The course of practical engineering has both advanced and retrograded. Within a few years cadets have acquired a knowledge of fortifications by having to make models in clay or sand of different works. The presence of the company of sappers and miners has permitted the introduction of instruction in preparing siege materials in ponton service, &c. At one time the company, both officers and men, was ordered off.

A portion of it is absent now. These changes have caused the practical instruction to retrograde.

The French course has been greatly improved. The present professor has introduced a system admirably calculated to effect the object for which the study of French is pursued at this institution, and that is to enable the student to read understandingly any work that may be placed before him. I have doubts whether *all* of those who graduate can read French with entire facility; but I think quite as much time is given to the study as, considering all other parts of the course, its importance would justify.

A knowledge of Spanish is a great desideratum to our officers. As yet it is imperfectly, and, I think, unsatisfactorily taught. The field of selection for assistants is very small. There are few officers who have studied Spanish, and still fewer who speak it. I would have it allowed to appoint an assistant professor from civil life, upon the same footing as the other assistant professors, until a sufficient number of officers are educated to supply materials for instruction. This plan was adopted at one time in the French department. I think that more time should be given to the study of Spanish by curtailing some other branches.

[The Superintendent here read a portion of the second section of the act of Congress, approved March 1, 1843, making appropriations for the support of the Army, &c., providing for the appointment of cadets, which is as follows:

"And provided further, That the number of cadets, by appointments hereafter to be made, shall be limited to the number of the Representatives and Delegates in Congress, and one for the District of Columbia, and that each Congressional and Territorial district and District of Columbia shall be entitled to have one cadet at said Academy: Provided, that nothing in this section shall prevent the appointment of an additional number of cadets, not exceeding ten, to be appointed at large, without being confined to a selection by Congressional districts."]

At the request of the Commission, the Superintendent furnished the subjoined table showing the practice in relation to the latter provision of the above extract, during the five years previous to, and all of the years subsequent to, the passage of the act.

List of candidates appointed "at large" by the President of the United States, from 1838 to 1860.

Years.	No. of candidates.	Years.	No. of candidates.
1838	29	1850	10
1839	13	1851	12
1840	7	1852	16
1841	18	1853	10
1842	22	1854	10
1843	16	1855	10
1844	14	1856	10
1845	11	1857	11
1846	10	1858	11
1847	10	1859	10
1848	10	1860	10
1849	10		

The corps of cadets will be fuller next September than it has ever been at any time before. Arrangements have been made to give them all

accommodations in the barracks. The latter are warmed by furnaces in the basement. The atmospheric air passes into a chamber heated by iron stoves, thence to flues leading to the rooms. Separate flues furnish warm air to all of the stories up to the fourth. The system has been found defective. During the coldest weather of winter some of the rooms cannot be occupied; others are so warm as to be oppressive, and require the windows to be opened during the most inclement nights. For police discipline, comfort, cleanliness, and health, it would be best to warm barracks by hot water or steam. The latter would be much preferable. The furnaces should be placed outside of the building, and pipes pass through the rooms to warm the air already there, and not have hot air forced through flues into the room. In the academic building there have been three rooms so heated for the last two years. I thought the result satisfactory, but lately I have heard objections to the plan, arising, as I suppose, from want of proper attention in keeping pure water in the boiler, in the arrangement of plates, &c. I would be opposed to having fires in the rooms of cadets. They would endanger the building. Fuel would have to be carried to the fourth story. They would occasion a want of cleanliness, and promote irregularities in discipline that would divert cadets from their studies. I think that the health of cadets might be quite as well preserved by heating with steam as by fires, leaving a ventilation through chimneys and other openings.

It would not be advantageous to make any separation or distinction between any of the classes. I would do nothing to break up or impair friendship between them, or to prevent them from selecting their room-mates, with a view to assisting each other in their studies.

I have nothing to suggest in regard to the cadets' mess, but to have a constant, watchful care in carrying out the existing regulations. The fare at times is not good. This arises from inattention. There is no limit placed by regulations to the amount of the cadets' mess bills. The purveyor provides what he conceives to be enough, and keeps an account of the expenses, which are assessed *pro rata* among the cadets. The mess hall is inspected by Army officers. If there is anything wrong, the cadets can point it out to the inspector. If that officer cannot apply the correction, the case is laid before the Superintendent. The present system, as a general rule, succeeds well in practice. There have been occasional cases where bad provisions have been sent to me. Under the contract system there was a bill of fare which was never departed from. Now the purveyor is the agent of the corps, authorized to vary the bill of fare according to the changes of the season.

There is a manual required for the rifled musket at present used in the service. We have here a system different from that followed by the Army, and neither are sanctioned by proper authority.

At one time each cadet owned room furniture, which he burned on leaving the Academy. When I became Superintendent I determined to stop this waste of property. Iron bedsteads and tables were purchased, to be paid for by annual installments. Each cadet paid a certain amount per month for the use of these articles. They have now been paid for, and the monthly charge is much reduced, being just sufficient to keep them in repair, and renew them as they become worn out. The practice is to charge the new cadets twenty cents a month, and afterwards nothing.

No charge is made against any cadet for the support of the post-office.

If a balance is due to the cadet on pay-day, it is not paid to him, but

carried to his credit. Two dollars a month are retained from the pay of each cadet as an equipment fund to be received by him upon leaving the Academy. Any other balance due him when he leaves West Point on furlough is paid to him; and all of the balance standing to his credit, including his equipment fund, is paid to him when he graduates.

An examination at graduation upon the whole course of study pursued while at the Academy is not desirable. It would be extremely difficult, almost impracticable, to make such an examination; and, if it were practicable, it would not afford a better test of proficiency than the present system, nor would it be more just to the cadet. The application of the studies of the earlier years is made in the last year's course, and an examination upon that course is a sufficient test of proficiency in those earlier studies.

Here the Commission, at 3 p. m., adjourned to meet at 10 a. m. to-morrow.

J. C. IVES,

First Lieut. Topographical Engineers, Secretary.

WEST POINT, NEW YORK,
August 22, 1860.

The Commission met at 10 a. m. Present, all of the members except the Hon. Mr. Cochrance. The secretary present. The proceedings of yesterday were read.

A communication was received and read from Capt. G. W. Cullum, Corps of Engineers, in reply to the questions proposed in the circular letter of the 18th ultimo. (Appended and marked C².)

Also a letter from Maj. J. G. Barnard, Corps of Engineers, in reply to the same circular, expressing his concurrence, with a single stated qualification, in the views set forth by Captain Cullum. (Appended and marked B².)

Also a joint communication from Major Barnard and Captain Cullum in reply to the questions in the circular letter of the 23d ultimo. (Appended and marked D².)

Also a communication from Capt. E. O. C. Ord, Third Artillery. (Appended and marked E².)

And a joint communication from Capt. Joseph Roberts, Fourth Artillery, and Capt. James B. Ricketts, First Artillery, in reply to the circular letter of the 18th ultimo addressed to the captains of the artillery school at Old Point Comfort. (Appended and marked F².)

Also a communication from Col. S. Cooper, Adjutant-General, in reply to a special inquiry of the Commission as to the best mode, in his opinion, of organizing an examining board for special objects recommended by him in a previous letter to the Commission. (Appended and marked G².)

The secretary was directed to request Captain Cullum to furnish to the Commission a copy of a programme for a course of study in the science of war, alluded to in the above-mentioned communication from that officer.

Colonel DELAFIELD being present, in reply to questions proposed by the Commission, stated as follows:

The regulation respecting cadets found deficient in studies or conduct is:

[Here Colonel Delafield read the seventh section of the sixty-second paragraph Regulations for the United States Military Academy, with the appended form.]

I think the Academic Board should have the discretion of recommending deficient cadets to be discharged or turned back; provided, however, that no cadets be recommended to be turned back except for deficiencies in studies arising from sickness.

[At the request of the Commission the Superintendent here furnished the following tabular statement showing the list of cadets found deficient at the last examination; the record of the Academic Board thereupon, with the action of the Secretary of War in each case appended; also copies of the orders of the War Department in relation to the deficient cadets, and the order of April 12, from the War Department, respecting class standing and discipline at the Academy.]

Number.	Names.	State.	Class.	Age.	Time at Academy.	In what deficient.	Aptitude.	Habits with regard to—		Amount of demerit for the six months.	Special remarks in each case.	Final action of the War Department.
			Years.	Months.	Years.	Months.		Study.	General conduct.			
1	Blackstone, William T.	Md	46	5	110	Conduct	Very good	Rather studious	Regardless of regulations	114	Recommended for discharge	Permitted to continue with his class.
2	Bocker, John R.	At large.	47	6	20	Mathematics and French	Very little	Very studious.	Inattentive to regulations	74	do	Turned back one year.
3	Dixon, Joseph K.	Miss.	47	11	110	French	Little	Studious	Very inattentive to regulations.	96	In consideration of the fact that Cadet Dixon failed to pass his examination in June, 1859, and of his extreme inattention to regulations, the board recommend that he be discharged.	Permitted to continue with his class.
4	Dodge, Henry C.	N Y	46	1	20	Mathematics and French	Little	Idle	Not attentive to regulations.	49	Recommended for discharge	Turned back one year.
5	Farley, Henry S.	S C	48	3	20	French	Little	Very idle	Extremely inattentive to regulations.	99	do	Permitted to continue with his class.
6	Hamilton, James	S C	46	11	20	Conduct	Ordinary	Variable	Regardless of regulations	141	do	Do.
7	Kinney, Richard S.	Va	47	4	20	Mathematics	Little	Idle	Very inattentive to regulations.	89	do	Turned back one year.
8	Lord, James H.	Pa	47	4	30	French	Little	Not studious.	do	92	In consideration of the fact that Cadet Lord failed to pass his examination in June, 1859, and of his extreme inattention to regulations, the board recommend that he be discharged.	Permitted to continue with his class.
9	Maney, Frank	Tenn	48	4	20	Conduct	Fair	Variable	Regardless of regulations	146	Recommended for discharge	Do.
10	Murray, Albert M.	N Y	47	11	20	French	Very little	Very studious.	Attentive to regulations	21	The board see no objection to Cadet Murray being turned back to the succeeding class.	Do.
11	McKee, George W.	At large.	46	3	20	Conduct	Fair	Variable	Regardless of regulations	109	Recommended for discharge	Do.
12	Russell, E. Kirby.	At large.	47	6	20	Mathematics	Little	Not studious.	Very inattentive to regulations.	97	do	Turned back one year.
13	Wilson, J. Eveleth.	At large.	46	0	110	French	Fair	do	Not attentive to regulations.	54	The board see no objections to Cadet Wilson being turned back to the succeeding class.	Permitted to continue with his class.

Report of the Cadets of the United States Military Academy, who, at the examination in June, 1860, were pronounced "not proficient"—Continued.

Number.	Names.	State.	Age			In what deficient.	Apptude.		Habits with regard to—		Amount of demerit for the six months.	Special remarks in each case.	Final action of the War Department.
			Years.	Months.	Time at Academy.		Study.	General conduct.					
14	Barnard, William C.	N. J.	5 17	5 1	0	Mathematics and English studies.	Little	Studios.	Very attentive to regulations.	4	The board is of opinion that the failure of Cadet Barnard is due mainly to sickness and absence, and that this cadet previously failed in January, 1859; the board now hoping that he may be able to accomplish his course, see no objection to his being turned back to the succeeding class.	Turned back one year.	one
15	Cowan, Robert V.	N. C.	5 19	1 1	0	do	Very little	Rather studios	Not attentive to regulations.	58	Recommended for discharge	Do.	Do.
16	Drumb, Elisha E.	Ind.	5 18	1 1	0	English studies	Little	do	Very inattentive to regulations.	88	do	Do.	Do.
17	Sanno, James M.	N. J.	5 20	9 1	0	Mathematics	Very little	do	do	11	In consideration of the fact that Cadet Sanno failed to pass his previous examination in January, 1859, and of the belief entertained by the board of his inability to accomplish his course, the board is of opinion that he should be discharged.	Permitted to continue with his class.	
18	Taliaferro, John	Va.	5 18	5 0	10	Mathematics and English studies.	Very little	Not studios	do	83	Recommended for discharge.	Turned back one year.	one
19	Vance, Joseph W.	Ill.	5 18	1 1	0	Mathematics	Little	Idle	Extremely inattentive to regulations.	99	In consideration of the fact that Cadet Vance failed to pass his previous examination in January, 1859, and of the belief entertained by the board of his inability to accomplish his course, and extreme inattention to regulations, the board is of opinion that he should be discharged.	Do	

"Copy of the action of the Secretary of War on the report of the cadets of the United States Military Academy who at the examination in June, 1860, were pronounced not proficient."

"This report has been carefully considered, and is confirmed. In accordance with the recommendation of the inspector of the Academy Cadets Murray, J. E. Wilson, and Barnard will be permitted to go on with the succeeding classes.

"In the case of Cadets Blakistone, Blocker, Farley, Hamilton, Kinney, Lord, McKee, Maney, Russell, Dixon, Dodge, Cowan, Drumb, Sanno, Taliaferro, and Vance, while they have rendered themselves liable to the penalty just imposed by the regulations for continued inattention to study and misconduct, the department indulges the hope that the discipline of the Academy may be vindicated without a resort to that extreme penalty; and that, if these cadets are spared the discredit that would necessarily attach to them if separated from the institution under the circumstances connected with the recommendation for their discharge, the ill consequences of which to themselves and the mortification to their friends they do not appear to have contemplated, they will make use of their best exertions to confirm the expectations the department entertains of their disposition now to atone, as far as may be in their power, for the errors of the past. They will, therefore, be allowed to go on with their respective succeeding classes. They are admonished, however, that it is only by strict attention to study, and a faithful observance of the regulations, that they can hope to realize the great benefits the Military Academy is capable of conferring.

"JOHN B. FLOYD,

"Secretary of War."

"WAR DEPARTMENT, July 2, 1860."

"A true copy:

"H. G. WRIGHT,

"Capt. of Engineers in Charge."

"ENGINEER DEPARTMENT, July 6, 1860."

A true copy:

S. B. HOLABIRD,

First Lieut. First Infantry,

Adjutant Military Academy.

"WAR DEPARTMENT, July 30, 1860.

"On a reconsideration of my decision of the 2d instant, on the report of the cadets of the United States Military Academy who at the examination in June last were pronounced not proficient, I find that from haste and inadvertence in its preparation my intention is not correctly expressed.

"I intend to direct that Cadets Kinney, Russell, Dodge, Barnard, Cowan, Drumb, Taliaferro, and Vance should be turned back one year, and that the other cadets named in the report should receive the admonition expressed in my decision and be permitted to continue with their respective classes.

"The necessary orders to carry this explanation of my decision of the 2d instant into effect will be issued.

"J. B. FLOYD,

"Secretary of War."

"Colonel R. DELAFIELD, Major Corps of Engineers,

"Sup't Military Academy, West Point New York."

"ENGINEER DEPARTMENT,

"Washington, July 30, 1860.

"I certify the foregoing to be a correct copy of an original indorsement on file in this office.

"H. G. WRIGHT,

"Captain of Engineers in Charge."

A true copy :

S. B. HOLABIRD,

First Lieut. First Infantry,

Adjutant, Military Academy.

"ENGINEER DEPARTMENT,

"Washington, August 20, 1860.

"COLONEL: The Secretary of War directs that Cadet John R. Blocker, found deficient in mathematics and French at the late June examination, be turned back one year.

"Very respectfully, your obedient servant,

"R. E. DE RUSSY,

"Lieut. Col. Engineers, Commanding."

A true copy :

S. B. HOLABIRD,

First Lieut. First Infantry,

Adjutant Military Academy.

"WAR DEPARTMENT,

"April 12, 1860.

"The following regulations will be published immediately on its receipt at the Military Academy for the government of all concerned; and all existing regulations inconsistent therewith are hereby repealed :

"I. Hereafter all subjects which enter the estimate of class standing shall be matters of examination by the Academic Board.

"II. In making up the conduct rolls, only such demerit marks as are given for violations of published regulations shall be taken into account.

"III. Whenever a cadet shall be tried for an offense by a court-martial, the demerit marks for such offense shall be canceled.

"IV. Whenever a cadet shall feel himself aggrieved by a decision affecting his demerit account, he may appeal from such decision to the Academic Board, whose duty it shall be, at the end of each month, to consider and decide upon all such appeals.

"JOHN B. FLOYD,

"Secretary of War."

"A true copy :

"S. B. HOLABIRD,

"First Lieut. First Inf'y, Adj. Mil Acad."

There was a leave of absence granted by the War Department to one-half of the present first class during half of the encampment, and to the rest of the class during the other portion. These leaves have interrupted the practical instruction in engineering, ordnance, and gunnery, artillery, and in all of the programme, for the first class encampment. Half of this course is entirely lost to the first class thereby, for they have no subsequent opportunity of acquiring it.

Here the Commission, at 3 p. m., adjourned, to meet at 10 a. m. tomorrow.

J. C. IVES,

First Lieut. Topographical Engineers, Secretary.

WEST POINT, NEW YORK,
August 23, 1860.

The Commission met at 10 a. m. Present, all of the members, excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

A communication was received and read from Maj. Alfred Mordecai, Ordnance Department, inclosing a proposed programme for a four years' course of study. (Appended and marked H².)

The Commission proceeded to the consideration of the statements and evidence laid before them, and at 4 p. m. adjourned, to meet at 10 a. m. to-morrow.

J. C. IVES,

First Lieut. Topographical Engineers, Secretary.

WEST POINT, NEW YORK,
August 24, 1860.

The Commission met at 10 a. m. Present, all of the members, excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

Communications were received and read from Brevet Major Thomas Williams, Fourth Artillery, and from Captain Israel Vogdes, First Artillery, in reply to the circular letter of the 18th ultimo, addressed to the captains of the Artillery School at Old Point Comfort. (Appended and marked I² and K².)

First Lieutenant G. K. WARREN, Topographical Engineers, assistant professor of mathematics at the Academy, being present, in reply to questions proposed by the Commission, stated as follows:

The members of the first section of a class will generally study hard from ambitious motives. The lowest section will study from the fear of being found deficient; but many in the intervening sections do not exert themselves. I know of no corrective for this but to find the negligent men deficient, and send them off. The principles of mathematics learned by the different sections are nearly the same; but the first section, acquiring these more readily, have a greater amount of time to make applications of them. The lowest sections, in the course of algebra, omit the general theory of equations, without which it is impossible to acquire the whole of the succeeding course of calculus. I think that all should be compelled to master thoroughly the whole course of algebra. I believe that they would then be able to master the calculus, and subsequently the courses of applied mathematics. If the course studied by the first section were thus required of the whole class, I suppose that about one-fifth of those who are now graduated on mathematics would be found deficient from inability to acquire that course, independently of those found deficient merely from want of application. The standard among those who remained would be much higher than it is at present. There is enough time, in my opinion, devoted to the study of algebra. It might be well to postpone the acquirement of the more difficult portions—from chapter eight, on series, to the end of the book—until after the study of geometry. The former would then come into the latter part of the first year's course. It would not, in my opinion, be advantageous to have the age requisite for admission greater. It is training, to a great extent, that enables the cadets to master the course; and if

they were older it would be more difficult to train them. I do not think a deficient cadet should be allowed to again go over the year's course. There is about the same proficiency required now that there was when I was a cadet.

If the book on descriptive geometry, shades, shadows, &c., were re-written and properly arranged, I believe that considerable could be saved, which might be profitably devoted to other parts of the mathematical course, while the amount of acquirement in the former branches would be increased.

In all of the application of analysis to geometry in the mathematical course the cadets are required to construct diagrams in accordance with the results of the analytical work.

The Commission now resumed the consideration of the statements and evidence laid before them, and at 4 p. m. adjourned, to meet at 10 a. m. to-morrow.

J. C. IVES,

First Lieut. Topographical Engineers, Secretary.

WEST POINT, NEW YORK,
August 25, 1860.

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

The Commission resumed the consideration of the statements and evidence laid before them, and at 3 p. m. adjourned to meet at 10 a. m. on Monday.

J. C. IVES,

First Lieut. Topographical Engineers, Secretary.

WEST POINT, NEW YORK,
August 27, 1860.

The commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

The Commission resumed the consideration of the statements and evidence laid before them, and at 3 p. m. adjourned to meet at 10 a. m. to-morrow.

J. C. IVES,

First Lieut. Topographical Engineers, Secretary.

WEST POINT, NEW YORK,
August 28, 1860.

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

The Commission resumed the consideration of the statements and evidence laid before them, and at 4 p. m. adjourned to meet at 10 a. m. to-morrow.

J. C. IVES,

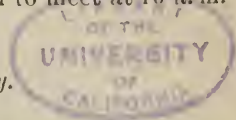
First Lieut. Topographical Engineers, Secretary.

WEST POINT, NEW YORK,
August 29, 1860.

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Cochrane. The proceedings of yesterday were read.

The Commission resumed the consideration of the statements and evidence laid before them, and at 3½ p. m. adjourned to meet at 10 a. m. to-morrow.

J. C. IVES,
First Lieut. Topographical Engineers, Secretary.



WEST POINT, NEW YORK,
August 30, 1860.

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

The Commission resumed the consideration of the statements and evidence laid before them, and at 2 p. m. adjourned to meet at 10 a. m. to-morrow.

J. C. IVES,
First Lieut. Topographical Engineers, Secretary.

WEST POINT, NEW YORK,
August 31, 1860.

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

The Commission resumed the consideration of the statements and evidence before them, and at 4 p. m. adjourned to meet at 10 a. m. on Monday.

J. C. IVES,
First Lieut. Topographical Engineers, Secretary.

WEST POINT, NEW YORK,
September 2, 1860.

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

A communication was received and read from Captain G. G. Meade, Topographical Engineers, in reply to the questions proposed in the circular letter of the 23d of July. (Appended and marked L².)

The Commission resumed the consideration of the statements and evidence laid before them, and at 5 p. m. adjourned to meet at 10 a. m. to-morrow.

J. C. IVES,
First Lieut. Topographical Engineers, Secretary.

WEST POINT, NEW YORK,
September 3, 1860.

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Cochane. The secretary present. The proceedings of yesterday were read.

The Commission resumed the consideration of the statements and evidence laid before them, and at 5 p. m., adjourned to meet at 10 a. m., to-morrow.

J. C. IVES, *First Lieut. Topographical Engineers,*
Secretary.

WEST POINT, NEW YORK,
September 4, 1860.

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

The Commission resumed and concluded the consideration of the statements and evidence laid before them, and at 5 p. m., adjourned to meet at 10 a. m. to-morrow.

J. C. IVES, *First Lieut. Topographical Engineers,*
Secretary.

WEST POINT, NEW YORK,
September, 5, 1860.

The Commission met at 10 a. m. Present, all of the members excepting the Hon. Mr. Cochrane. The secretary present. The proceedings of yesterday were read.

The Commission proceeded to the preparation of their report, but, without completing it, adjourned to meet in Washington City on the 28th day of November next.

J. C. IVES, *First Lieut. Topographical Engineers,*
Secretary.

WASHINGTON, D. C., *November 28, 1860.*

The Commission met pursuant to adjournment, and, being without a quorum, adjourned to December 3.

WASHINGTON, D. C., *December 3, 1860.*

The Commission met.

Present, Hon. Jefferson Davis, President, United States Senate.

Hon. Solomon Foot, United States Senate.

Hon. H. W. Davis, House of Representatives.

Hon. John Cochrane, House of Representatives.

Captain A. A. Humphreys, United States Army.

Absent, Major R. Anderson, United States Army.

The report was read and considered, and the Commission adjourned.

WASHINGTON, D. C., *December 13, 1860.*

The Commission met.

Present, as on the 3d.

Absent, Major Anderson, United States Army.

Subsequent to the adjournment of the Commission on the 5th September, 1859, a communication was received from Captain A. W. Whipple, Topographical Engineers, in reply to the circular letter of the 23d July. (Appended and marked M².)

A communication was also received from Brevet Colonel R. E. Lee, United States Army, in reply to circular letter of the 18th July. (Appended and marked N².)

The report was signed, and the Commission adjourned *sine die*.

Attest:

A. A. HUMPHREYS,

Capt. Corps Top'l Eng., U. S. A., member of the Commission.

A.

WEST POINT, July 20, 1860.

GENTLEMEN: The subjects taught in the drawing department of the United States Military Academy are topographical and landscape drawing, and such education of the eye as may be attained by the use of the lead pencil, pen and ink, and colors.

The course of instruction begins with the third class, which is divided into two equal parts and taught on alternate days. They commence with the conventional signs in topography, and are instructed in the method of representing the various kinds of ground, water, and other objects, embracing water and rocky shore, water and sandy shore, ponds, marsh, forest, slopes, cleared land, orchards, cultivated land, garden, villages, and cities. These drawings are made with the lead pencil, and are of the same size as the models with the heading and names of the topographical signs carefully lettered.

After they are in some degree familiar with the mode of expressing the various surfaces of the earth, they are required to make a careful drawing with pen and Indian ink from one of the models prepared for that purpose, in which, besides the varied surface of the ground, are road, bridge, canal and lock, &c.; and to those who most excel in making this drawing are given the more elaborate models of "Sagonte" and "Tenegone," embracing mountain, field, and ravine, and where the military approaches and defenses are distinctly indicated.

On the completion of this part of the course, they are then instructed in the use of the brush and colors in topography—the conventional tints, and the manner of shading the various slopes of the ground; and when the spring is sufficiently advanced to go out, they are taken into the field, and with the prismatic compass, instructed in its use, and the method of making a topographical sketch of the ground in the neighborhood of the Academy, from which some of the most proficient make larger colored drawings.

The course of topography has been so arranged as to be taught at the same time that the class is learning surveying, and the use of mathematical instruments in shades and shadows, and consequently, when they become the second class, are instructed in landscape drawing after they have learned perspective. They are taught both the vertical and horizontal system of representing the surface, and are engaged altogether about 185 hours.

The second class is instructed in landscape drawing in progressive studies on form, light and shade, and color. The elementary studies occupy about 60 hours; practice with lead pencil in light and shade,

about 110 hours; practice with brush and colors from colored models, from solids, and in sketching from nature, about 200 hours, which completes the course of drawing as now taught at the Academy.

With regard to the second question, I would respectfully suggest that, as the most proficient in drawing do not necessarily stand among the highest when in the first class, a section might be formed of the first ten of that class, and taken out into the field in September, or any more convenient time, and such practical instruction given to them as would promote their usefulness in the corps to which they might be attached.

Question 3. As all the drawings are made under the immediate eye of the instructor, and as the aptitude of cadets vary very much, the method of instruction is consequently at the same time both theoretical and practical.

Question 4. The practical instruction is given as early in the spring as the weather will permit. The third class receive it during the month of April, and the second class in May, either from the windows of the drawing academy or in the field.

Question 5. With regard to the time given to the study of drawing, as so much depends on practice that very little proficiency can be reasonably expected without it; and, as the cadets are not permitted to draw in their own rooms, or out of the time allotted for that purpose in the drawing academy, I see no reason for reducing it, but, on the contrary, think that it might be so far increased by continuing the instruction to the head section of the first class, for at least a short time, as would be highly beneficial.

In reply to question 6. The cadets of the third class are occupied ten hours every two weeks, and those of the second class ten hours each week, which is one day less in each week than they formerly had.

Question 7. I do not think the time required in drawing is too much, nor can I suppose it an overtax with reference to the demands made upon the cadets by the other departments.

The modification that would be necessary to enable the first ten or twelve members of the first class to practice in the field might be so arranged as to come between two and four o'clock during the months of September or October.

Question 8. I have no opportunity of knowing whether the cadets are overtaxed in the lessons they are required to study in quarters or not, as this can only be estimated by the character of their daily recitations; but, as far as I am able to judge in the examination hall, it seems to me that the ethical department is overburdened; and with regard to tactics, as it runs through the whole term of five years, it appears to be more than is sufficient for the subject.

Question 9. In order to perform the duty of instructing a part of the first class in drawing from nature, an additional assistant would be required; indeed the necessity already exists, for it is barely possible when either myself or one of my assistants is in the field, for the two remaining in the drawing academy, with from sixty to seventy cadets, to give the necessary instruction, and at the same time maintain proper discipline and order.

Respectfully submitted,

ROBERT W. WEIR,
Professor of Drawing.

UNITED STATES MILITARY ACADEMY COMMISSIONERS.

B.

The following memorandum embraces in outline the general views of Mr. G. W. Smith, in regard to instruction of cadets at the United States Military Academy.

First. Be strict in preliminary examination, and stop the practice of arithmetic; not that they are to be taught these branches after arriving at this place, previous to their examination.

Second. The course should be four years. Five is too long to keep a young man subjected to the restraint and confinement of cadet life. It is too short a period for the purpose of completing a professional and collegiate education; too short for making experienced, skillful, and accomplished soldiers, engineers, chemists, astronomers, &c. Thoroughly educated physicians and lawyers are not graduated at colleges. Institutions of learning for boys and young men, whether colleges, academies, or universities are intended now for training the mind and laying the groundwork of general principles, and teaching pupils how to learn, than for the purpose of turning out accomplished scholars and professional experts.

This principle has been, to a certain extent, lost sight of by those in authority at the Military Academy, as well as by professors in most of our colleges and universities. They have by little and little fallen into the error of teaching too many things; they cover too much ground.

The most serious objection to the "five years" is that it tends to cramp, discourage, and weary, at a period of life when developing manhood requires contact with the practical world.

Every officer who has graduated at this institution cannot but remember how crude, and in most cases entirely erroneous, were all his views and opinions of men and things as they really exist. A certain degree of this kind of thing may be well enough in weaning the embryo officer from local home notions.

But there is imminent danger in this thing being carried too far. An officer of the Army should be by education pre-eminently a practical man of the world. The strain is too great on five years of West Point discipline; the inevitable effect is to deaden, and in many cases to crush out all the energies and buoyant hope of manhood, leaving behind a fossil instead of an enthusiastic young soldier.

If we must have five years, then in the name of all that is reasonable, let the cadets be brevetted officers, during the fifth year, and let their studies be light.

Third. The great change required in the course of instruction is this, viz, "to cover less ground." "Learn little, but learn well," is a text upon which a long sermon could be preached, and is moreover good sense and sound philosophy. The professors and assistants as a general rule should teach more, and there should be less reciting for a mark. A cadet should be marked, if possible, upon what he really knows and thoroughly and practically comprehends at the time he leaves the recitation room, rather than upon the crude notions with which he generally comes there.

Fourth. Again, it is of great importance that professors should wisely discriminate between different parts of the course. There are in every subject certain leading facts, general principles, important propositions, and occasionally fundamental rules or formula with which every cadet should be as familiar as A, B, C, or the multiplication table. Without a perfect knowledge of these, a cadet should be inevitably found deficient and dismissed. On the other hand there are many things neces-

sarily contained in every thorough course, the existence of which it is alone necessary for the cadet to know. Between these limits, there is a wide margin for making up class rank.

Fifth. A board can to a certain extent lay down the limits between which the various subjects are to be taught, but much must necessarily be left to the judgment and discretion of the professor, who should go to his work thoroughly impressed with the belief that it is better one single thing should be learned thoroughly, than that a hundred or even a thousand should be crammed into the mind undigested and misunderstood. It is the physical and mental man, and not what he can talk of X and Y, or of war, that is important.

Sixth. Professors should as far as practicable be military men, and they should retain their Army rank. Professors now at the Academy should be restored to the places they would have occupied had they not been compelled to resign their commissions. Any officer appointed a professor should, during the continuance of such appointment, be *ex officio* major of engineers; all assistant professors, *ex officio* captains. The professors, as a general rule, to serve for ten years, assistant professors for four years. Every professor should when on duty wear the uniform of a major of engineers, or that of his Army rank. The chaplain should not be a professor; there should be a professor of English studies instead. The cadets should be drilled in the ranks as private soldiers for the first two years only. The third year they should be non-commissioned officers, the fourth year officers.

Seventh. Three encampments—say seven months, are devoted exclusively to military instruction and exercises. In barracks reveille should be at 5½ a. m., supper at 6¼ p. m., call to quarters at 7, and tattoo at 10 p. m.

There should be no cadet guard during the academic term, and no dress parades, excepting the Sunday morning inspection.

By lighting the two large halls, the time between 4 and 6 p. m. can be made available in all weather and at all seasons of the year.

To facilitate the exercises and practice in artillery and cavalry, there should be a full complement of horses and soldiers for each, entirely separate, and let an artillery officer command the one, and a cavalry officer the other; both, of course, under the commandant.

Eighth. First year— 8 to 11. Mathematics.

- 11 to 1. Riding, gymnastics, fire arms, &c.
- 2 to 4. Reading, writing, spelling, grammar, and geography.
- 4 to 6. Infantry drill, infantry tactics, bayonet exercise, &c.

Second year— 8 to 11. Mathematics.

- 11 to 1. French.
- 2 to 4. Drawing—more by rule, more teaching and instruction, by lecture and from books.
- 4 to 6. Infantry and cavalry and artillery drills and tactics.

Third year— 8 to 11. Natural and experimental philosophy.

- 11 to 1. Neither recitation nor exercise.
- 2 to 4. Chemistry, mineralogy, and geology.
- 4 to 6. Non-commissioned officers' and military exercises.

Fourth year— 8 to 11. Military and civil engineering.

- 11 to 1. Gunnery, alternating with Spanish.

2 to 4. (Before January.) Military campaigns, strategy, grand tactics, composition of armies, military administrations, &c., &c.

The latter branches being taught as now, by the officers on duty in the tactical department, under the general supervision of the commandant.

Fourth year—Four to six. Company officers and military exercises. Practical engineering should be taught during the encampments. The cadets should be allowed recreation between reveille and breakfast, in addition to present time allowed.

In the first year there would be,	for recitation and study,	8 hours
	for recreation and meals,	4½ "
	for military exercises,	4 "
	for sleep,	7½ "
In the second year there would be,	for recitation and study,	8 hours.
	for drawing,	2 "
	for recreation and meals,	4½ "
	for military exercises,	2 "
	for sleep,	7½ "
In the third year there would be,	for recitation and study,	10 hours.
	for recreation and meals,	4½ "
	for military exercises,	2 "
	for sleep,	7½ "

In the fourth year there would be,	for recitation and study,	10 hours.
	for recreation and meals,	4½ "
	for military exercises,	2 "
	for sleep,	7½ "

Ninth. During all recreation hours cadets should be allowed to walk on the public lands.

Except during inspection and church, the whole of Sunday until the call to quarters in the evening should be a day of recreation as well as rest. Saturday evening should be given to recreation until tattoo.

Demerit should not count in standing. Punishments should be summary and severe, increased largely on repetition of offenses. Let 100 demerit in six months dismiss, as now. Watch and suspect cadets less; put them on the footing of men responsible for their actions; and for breach of faith, prevarication, or any ungentlemanly conduct, let it be understood that dismissal is inevitable. In general, let fewer orders be given, but see to it that none are habitually disobeyed, and that all intentional neglect and disobedience is promptly and severely punished. Anything like espionage by inferiors should be religiously avoided, and superiors should always be exceedingly careful to avoid all appearance of taking undue means for spying out delinquencies. Cultivate, above all things, in the cadet, a manly candor and honorable regard for truth, without which there can be no soldierly pride and spirit.

This is a hard course; but with competent and judicious professors and teachers, without cramming, will make men, and eventually good officers, of all graduates.

A programme of time being determined upon, it would be proper to thoroughly examine the programmes of studies made out by the different courses, which must of necessity be left in a great degree to the

several professors, to be regulated by a board, if necessary, from time to time—say annually, just after the June examination.

In case it is determined that the cadets must stay at West Point five years, I would let them be brevetted second lieutenants at the end of the fourth year, and would give them furlough till the 1st of September following. Gunnery should be taken out from 11 to 1 and put in from 2 to 4, before January, in the fourth year; Kent, Constitution, De Hart, &c., 2 to 4, after January, fourth year; and Spanish, and military campaigns, strategy, &c., taken out of the fourth year.

Fifth year—"Officers" to be officers in charge and officers of the day, to drill the battalion, the batteries, at cavalry, &c., and superintend military instruction and exercises generally as assistants to the regular instructors. To take their meals at the officers' mess; to live entirely separate from the cadets, and be subject to that discipline and control usually imposed upon officers, and no more.

This year, 8 to 11—lectures on military campaigns, battles, marches, &c.—one at least of Caesar, Frederick, and all of Napoleon; one or more in United States, &c., including strategy, grand tactics, &c.

Art of war taught by an officer of the general staff of the Army.

Two to four, before January—Composition, elocution, and lectures on literature.

Two to four, after January—Spanish.

This would hardly pay—could do no great harm to the cadet, but would keep forty or fifty officers out of service annually.

C.

WEST POINT, N. Y., *July 24, 1860.*

SIR: I have the honor to reply to the questions submitted by the United States Military Academy Commission, as follows:

1. "Do you consider that the training at the Academy is well adapted to the physical development of the cadet?"

Answer. I do—*eminently* so. It cannot be denied that a certain amount of physical exercise is, at all ages, conducive to health and the due performance of the animal functions, and also at the period intervening incipient puberty and manhood, essentially requisite to full and perfect muscular development. In elegance of form and proportion, with capabilities of endurance, it would be difficult to select an equal number of the same age at any other institution to compare with a graduating class at the Military Academy. The remarkable exemption of Army officers, graduates of West Point, from tubercular disease of the lungs, can be accounted for in no other way than by the physical training they have had while at the Military Academy—a pathological fact of great interest to the Army medical officer and to the profession in general, suggestive of the proper course to be advised to those having hereditary tendencies to pulmonary affections.

The hospital records at West Point exhibit eleven deaths among the cadets from 1840 to 1860. Inclosed herewith is an extract from hospital register.

I "have observed no indications of mental or physical overwork, or any injurious effects resulting from the course of instruction or discipline pursued at the Military Academy, and have no modifications or changes to suggest."

2. I "have no modifications or changes to suggest in regard to the qualifications for admission to the United States Military Academy."

It may be proper to state that I have been on duty at West Point but a short time, and therefore have had limited opportunities for observation.

Very respectfully, your obedient servant.

CHS. McDOUGALL,
Surgeon, U. S. A.

First Lieutenant J. C. IVES,
*U. S. Topographical Engineers,
Secretary U. S. Military Academy Commission.*

Cadets of the United States Military Academy deceased from 1840 to 1860.

1840.	September 11.	Dysentery	1
1841.	September 9.	Dysentery	1
	November 3.	Fever, continued	1
1845.	January 20.	Pneumonia	1
	July 17.	Drowned	1
1849.	March 15.	Typhoid fever	1
	July 25.	Dysentery	1
	September 18.	Cholera	1
1853.	June 24.	Phthisis pulmonalis	1
1855.	June 12.	Congestio cerebri	1
1857.	May 24.	Phthisis pulmonalis	1

RECAPITULATION.

Deaths from continued fever	1
typhoid fever	1
cholera	1
dysentery	3
pneumonia	1
phthisis pulmonalis	2
congestio cerebri	1
drowned	1
Total deaths in twenty years	11

CHS. McDOUGALL,
Surgeon, U. S. A.

D.

FORT COLUMBUS, NEW YORK HARBOR,
July 23, 1860.

SIR: In answer to your circular of the 18th instant, received yesterday, I have respectfully to submit the following:

I shall not attempt to make suggestions in reference to the science and literature that should occupy the cadets, those matters being already in the ablest hands, but I propose to submit to your honorable Commission a few remarks resulting from a somewhat long and observant experience on some of the consequences of the course at present pursued at West Point.

Under the four years' rule I think the sudden transition from the highest state of mental tension to one of perfect inactivity, which occurs in most cases on the graduation of a cadet, is exceedingly injurious, leaving a void that is too often filled up with an undue gratification of the licentious passions, or else by the trashy literature with which our country is flooded, and which is not less injurious to the mind

than the other is to the morals. To obviate this, a fifth year should be added, and devoted to acquiring a practical knowledge of all the duties of the new position they are to occupy, including a thorough knowledge of martial law and courts-martial.

During this year the cadets should be allowed a greatly-increased liberty, closely assimilated to that of the junior officers at a military post, with permission and opportunity to use the post library at discretion.

But the feature in the organization of the Military Academy that is most to be deprecated, and which every proud man and brave soldier belonging to the infantry arm feels most poignantly, is the non-representation of the infantry there. Surely there is intelligence and character enough in that arm to furnish representatives *pro rata* with its strength in the Army, and I contend that such representation is of primary importance to its respectability and usefulness.

At present even the infantry tactics is taught by officers of other corps, while its representation is confined to a few subalterns, taken almost hap-hazard, and who, though full of industry and zeal, have neither the antecedents nor position necessary to inculcate in the cadets a proper appreciation of its merits. The commandant of the corps exercises a more important influence on the military character and opinions of the junior officers of the Army than any other individual, and his duties being mainly those of an infantry officer, it is only by reflecting on the officers of that arm that he can be taken from any other. So also of the officers commanding cadet companies; they teach the infantry drill and discipline—duties that cannot be given to those of another arm without an inferred inferiority; and I contend further, that instead of thus detracting, by implication, from its character, the best interests of the service and the Academy require that it should be fostered and supported above all others.

Scattered over the whole country, the officers of infantry, except the superannuated and a few successful sycophants, are, as a general rule, kept on the frontier, where they can neither be known nor heard, and are thus cut off from all the advantages derived from a fair comparison of their merits and capacity with their brethren of other corps, as well as from those individual influences that are (unhappily) so potent in the awards of favors and promotion. This is not the case with the other arms of the service; the artillery and staff corps serve at home, where they are seen and known by the people, and appreciated properly. And to the mounted corps a factitious importance is attached by common consent, which, in connection with the fact that it is the arm from which all generals are made, places it above the necessity of seeking aid from the Military Academy.

I am, sir, very respectfully, your obedient servant,

TH. H. HOLMES,

Major Eighth Infantry.

J. C. IVES, *First Lieut. Topog'l Engineers,*

West Point, New York.

E.

WEST POINT, NEW YORK,

July 24, 1860.

SIR: I have the honor to return the following replies to the questions contained in your letter dated July 18:

First. The subjects taught in my department are: The practical oper-

ations of a siege, the construction of military bridges, field fortifications, and military surveying.

The first comprises the construction of siege material, as gabions, fascines, &c.; tracing and executing the various kinds of trenches, saps, batteries, &c., employed in the attack of a fortified place; sinking shafts, running galleries, and firing mines.

The second, the construction of ponton, trestle, raft, and flying bridges.

The third, tracing and profiling field works, posting working parties.

The fourth, the use of instruments in field sketching, manner of making a sketch of a military position.

With regard to the second question: The course of instruction in practical engineering is certainly very limited, especially for those cadets who are destined for the staff corps; but under the present organization of the Academy I do not think any alteration could be made without interfering materially with some of the other departments.

Third. The method employed in giving the above instruction is as follows:

Five practices in survey of a military position: Measuring a base line with a chain, and by pacing; taking the bearings of prominent objects with prismatic compass from each extremity of base line; noting the features of the ground; making a rough sketch on the ground of the position.

Making an itinerary of a route: For this purpose each section is conducted over some road leading to the above position, accompanied by a wagon to which an odometer is attached. At every change of direction in the road the distance marked by the odometer is noted, and the bearing of the course taken by a prismatic or pocket compass. The distances to objects of interest on either side to be estimated. Each cadet is required to make a sketch of the route, on which he represents the road, with its true direction, all water-courses, forests, mountains, defiles, &c., in the vicinity of the road; also, each point on the route on which a camp could be established; giving, in side notes, all the information concerning the road and country passed over which would be of interest in a military point of view.

Six practices in tracing and profiling field works, and the manner of posting the working parties for executing the same.

Nine practices in modeling in sand to a given scale the various field works, batteries, and other works of attack and defense.

During the month of August each cadet is required to make one gabion, one sap fagot, one hurdle, one sand bag, one fascine of each kind, and to assist in making and filling one sap roller.

The time remaining after the above is completed is occupied in the construction of military bridges.

As there are no recitations in this department, questions 5, 6, 7, and 8 are not applicable to it.

In reply to the last question, I would propose that cadets assigned to the staff corps be retained at this post for one year after graduating, to receive a thorough course in practical engineering and the duties of the observatory.

Respectfully submitted.

J. C. DUANE,

Lieut. of Eng. and Inst. Prac. Engineering.

First Lieutenant J. C. IVES,

Secretary of the U. S. Military Academy Commission.

F.

HEADQUARTERS OF THE ARMY, *July 25, 1860.*

SIR: I have the honor to acknowledge your letter on the part of the Commission, asking me to state "what modifications or changes in the organization, system of discipline, and course of instruction at the Academy are, in your [my] opinion, desirable to secure to the Army officers best qualified to perform their various duties, and to meet all their responsibilities."

Although I have had an outside acquaintance with the Military Academy of forty odd years, and have often, as a visitor, presided at its annual examinations, yet never having had the benefit of being a cadet, nor of holding particular discussions with the better informed on the inquiries presented by your letter, it is with much self-distrust that I offer a reply.

On a preliminary point, however, I can speak without hesitation, and with the utmost confidence. Hence, I give it as my fixed opinion, that but for our graduated cadets, the war between the United States and Mexico might, and probably would, have lasted some four or five years, with, in its first half, more defeats than victories falling to our share; whereas, in less than two campaigns, we conquered a great country and a peace, without the loss of a single battle or skirmish.

I am, however, far from holding that the Academy, notwithstanding its great resultss in war, and its diffusion of many of the higher arts of peace throughout the land, is not susceptible of certain interior ameliorations; but for the reasons already mentioned, I do not feel sufficient confidence to suggest more than one or two improvements.

It is known to everybody that in many congressional districts sparsely populated, common schools are necessarily too distant for the convenient attendance of the greater number of boys; yet such districts send their quotas of candidates to West Point for admission, many of whom fail to pass the preliminary examination, although the preparatory knowledge required is at the minimum for a four years' course. So, also, many other appointees present themselves, who though bright and eager for learning, are, from the poverty of their families, sent forward equally without the necessary preparation. The many rejections at the first examination, and the still greater number of failures *after* admission, clearly referable to bad habits contracted at home—the results of defective family discipline, so common throughout our country—have long spread so general a prejudice against the Academy, that it would certainly, by this time, have been altogether abolished but for the admiration won by graduates in the Mexican war. That generous and patriotic feeling, however, is not likely to survive the present generation; hence the necessity of finding some means of preventing or diminishing the annual growth of the popular prejudice in question.

In my opinion, a preparatory school in the Academy—a fifth class—with a lower standard of preparatory knowledge, together with admission at an earlier age (say fourteen) before bad habits have become chronic, would be a proper and sufficient remedy. Candidates of more age, and better preparation, might, of course, be admitted into the fourth class, as formerly. And in order that the Army may not be diluted, by appointments to commissions direct from civil life, I beg to add a cognate suggestion, viz: an increase of the corps of cadets by the appointment of one annually, on the nomination of every United States Senator.

I apprehend that some legislation is necessary to prevent the Executive from restoring cadets who have been duly dismissed, according to law or regulation; and to stop the practice of turning back deficient cadets to recommence the studies of the previous year.

I will suggest, also, the probability of benefit from dividing the subjects now taught by the chaplain, and professor of &c., &c., into two parts, and placing one of them under another chaplain, &c., of a different sect.

I am, very respectfully, yours,

WINFIELD SCOTT.

Lieutenant IVES,

Sec'y to the U. S. Military Academy Commission.

G.

MIDDLETOWN, CONN., July 25, 1860.

SIR: Yours of the 18th instant reached me yesterday, through the Adjutant-General's Office, which is probably the cause of so much delay.

I hasten, in compliance therewith, to give the Commission my views as to the course of instruction at West Point to "secure to the Army officers best qualified to perform their various duties, and to meet all their responsibilities."

In the first place, I deem it of the utmost importance to our country that the officers of the Army should come from the whole country; that is to say, that the people from all parts of the country should be duly represented in the Army. With this view, I regard the existing law, authorizing one cadet at the Academy always from each congressional district, and one from each Territory and the District of Columbia, and the appointment at large of ten cadets by the President, as very just and unexceptionable. This law was passed at the time the course of instruction was fixed at four years, and was enacted, undoubtedly, to equalize the appointments to the Army among the people, and afford the President a fair proportion of appointments for the reward of service.

In the second place, inasmuch as military knowledge and taste are essential to make a good officer or soldier, whenever the condition of the country will admit, the appointments should be to the Army through the Academy, and by promotion of meritorious non-commissioned officers. This method, under the mode of appointment of cadets as above, would best fill the Army from the people at large, as far as practicable.

With these views, I regard the course of instruction extended to five years as injurious, inasmuch as there are no more graduates in five years than we had before in four years; and, of course, the Army vacancies are filled up by citizen appointments, which are not always made on principle, but mostly by favoritism. The vacancies in the Army by resignations and deaths, for the last seven years, will average fifty one annually, whereas the graduating classes, for the same period, will not probably average thirty-five.

Another objection to the five years' course is this: It is extremely onerous to young men entering, from sixteen to twenty-one years of age, with good physical ability, and talent corresponding, as they must have, to remain five years in such an institution, subjected to so many deprivations, from which most colleges in the country are exempt. I now refer to associations with citizens and intercourse with the world. Argument here is unnecessary.

It only remains now to show that four years is ample to make good officers for the Army as a body competent to all the demands of the service, "and to meet all their responsibilities." To this end I have only to cite the career of our Army in the Mexican war, the officers of which mostly entered the Academy between the ages of fourteen and twenty-one. And I make no hesitation in the assertion that there was no failure in the undertaking of any military operation or expedition during the war, resulting from a want of education in the graduate. There was only one thing in which the graduate would have been materially benefited in that war, and that was a knowledge of the Spanish language.

Under the old system of four years, officers graduated in different corps and arms of the service according to their respective abilities and qualifications, and every graduate, even the one at the foot of his class, had considerable knowledge of the exact sciences, &c., and their application to the art of war; and the great problem was solved of obtaining respectable talents and good physical ability, combined with all that was necessary in theory and practice to enable a graduate of genius to pursue his particular talent and taste in his particular arm of service by future study; but if he had no such ambition, genius, or state, an additional year at the Academy would be of no use to him and a useless expense to the country, which is an important consideration in the good government of a people.

I have thus shown that four years is long enough for the good of the Army and country, in point of time. It only remains now to have that time properly employed, and not frittered away on unessential and matter-of-course things, and on a useless attempt to make the Academy a finished school of practice for every branch of the Army profession, and of rhetoric and oratory. The Academy must be scientific and theoretical, and combined with no more practice than to illustrate principles, and to afford a healthy action of mind and body, and a knowledge of the drill of each arm of the Army service; thus leaving the door open to attain perfection according to the genius and taste of the graduate in his future career. To this end I would, first, require the cadet, on entering the Academy, as now, to be between sixteen and twenty-one years of age, to read and write well, to understand the four ground rules of arithmetic, and fractions and proportion. He should know well the geography of his own country, and have a good general knowledge of the geography of the world. He should know the history of his own country and race, and have a general knowledge of the history of bordering nations. This much of education is obtained all over the United States, at the free and common schools, by boys before they attain the age of sixteen, if they have ordinary capacity, and therefore a poor laborer's son is not exempt from admission, and the Academy is open to all the people. Second, I would discard all the English studies of belles-letters, so called, comprising grammar, practical ethics, compositions, &c., and devote the first two years to the mathematics and the French language, and the military drills, fencing, and gymnastics. The English language will never be forgotten where it is constantly spoken and translated from the French and Spanish. It will take care of itself, and the best art of reasoning is in the education of the mind by mathematical investigations. Third, I would devote the third year to natural and experimental philosophy, and the Spanish language and drawing, and the continuation of the military drills and riding. Fourth, I would devote the fourth year to military and civil engineering, chemistry, and mineralogy, Spanish language,

drawing, moral science, and international law, and the continuation of the military drills, diversified by a healthy exercise in the field, in the construction of fascines and gabions, and the bridging of streams.

In this way I would dispose of four years' tuition at the Military Academy, and no more, and prepare young men for a career of future usefulness, either as officers or citizens, according to their ambition in life. They will then have an educated mind, and be "best qualified to perform the various duties and meet all their responsibilities."

This change can be marked out in the detail readily by the Academic Board. It will relieve the chaplain from all classes except the first, and afford him more time for his clerical duties, which I regard as highly important in such an institution as this.

All which is respectfully submitted to the Commission.

JOS. K. F. MANSFIELD,
Colonel and Inspector-General, U. S. Army.

P. S.—Please acknowledge the receipt of this.

J. M., I. G.

Lieut. J. C. IVES,
Secretary of the Commission, &c.

H.

PIKESVILLE ARSENAL, July 24, 1860.

SIR: In reply to the letter of the United States Military Academy Commission, dated 18th instant, requesting "my opinion as to what modifications or changes in the organization and course of instruction at the Academy are desirable," &c., I have to state, first, as regards the *organization*: I consider it has stood the test of time, and should regret any change, except to leave the executive duties entirely to the control of the Superintendent and Academic Board, and to avoid all reference for decisions to the Department of War, except in extreme cases. Second, as regards the *course of instruction*, I am of opinion that *four years* is sufficient time to devote to the studies taught there. The subjects our officers are deficient in on leaving the Academy are a practical knowledge of business and the customs of service; and young officers are often thrown into responsible situations where, from their ignorance of making returns, keeping accounts, &c., they are involved at the Treasury, or have to trust to clerks, or others, to keep their accounts, which does not always insure them from worse loss. The remedy would be to keep all graduates a year at schools of practice for their different arms, to be instructed in the details of service, the keeping of accounts, making returns, &c. We have no such schools except the one for artillery, at Old Point.

That schools could be profitably and conveniently formed by adopting the recommendations which have been made for recruiting by companies and establishing regimental depots, as in the English service, might be shown; but this being without the control of the board, I will not discuss it.

With much respect, I remain your obedient servant,

BENJ. HUGER,
Brevet Colonel, United States Army.

Lieutenant J. C. IVES,
Secretary, &c.

I.

WASHINGTON, D. C., *July 24, 1860.*

SIR: In answer to the request of the Commission at West Point, as communicated to me by your letter of the 18th instant (received yesterday), I have the honor to state:

In my opinion the organization of the United States Military Academy would be materially improved by a repeal of the law, or usage, which confines the selection of the Superintendent to a single corps of the Army. I do no injustice to that corps when I assert that as fit selections may be made from others. By rescinding the existing restriction, the field of selection will be enlarged, and the best qualifications, wherever found in the Army, will be rendered available. The only objection I can think of to this measure is that, in case of the selection of a regimental officer, it may remove him from service with his regiment for too long a period, if he is to be permitted, as he should be, to inaugurate, and allowed time to carry out, a system of superintendence of his own. Four or five years, however, will most probably be sufficient for any one to indicate, beyond a reasonable doubt, his capabilities in that respect. If they are shown to be eminently remarkable, the advantages to the public interest of retaining him in position would, generally, outweigh any evils resulting from absence from regimental service; and, in cases of emergency, the more important of the two could always be made to prevail by special orders. This objection, moreover, whatever force it may have in the case of regimental officers, does not apply at all to those of staff corps. The propriety of adhering to the present rule is advocated by many on the ground that its very narrowness is its chief advantage, by limiting the operation of favoritism in selection. I have never been able to understand why the same authority which is intrusted, by the highest law of the country, with the selection of cabinet ministers, judges of courts, and foreign ambassadors, may not be trusted with the selection of a Superintendent of the Military Academy; especially when restricted in his choice to the Army. The very nature of the office, and rank of the incumbent, would, of themselves, also confine the selection to the grade of field officer, which none can now reach until his standing, character, and qualifications have been well established and are fully known. It seems to me that the argument of favoritism amounts simply to foregoing a measure, salutary and wise in itself, from fear of some imaginary evil that may arise from its adoption. No other change in the *organization* at the Academy occurs to me as desirable, but I have no doubt at all that great advantage would result from enlarging the field of selection for the superintendency; the greatest by extending it to the whole Army, and much, though in less degree, by extending it to all the staff corps.

As regards the course of instruction at the Academy, it seems to me to include now no branch which is not useful, or which can be thrown out without disadvantage. It may be that some courses of study are pursued further than is due to their proportionate importance to the limited period of five years assigned to the entire course. That is a question of detail, the true answer to which can only be reached by careful inquiry, and examination and comparison on the spot. I am safe, however, in declaring my settled conviction, after giving much thought to the subject, that no reduction in the period of time, five years, now allotted to the entire course, can be made without serious disadvantage. That period is necessary to acquire a knowledge, to a

sufficient extent and no further, of the essential branches now taught, starting from the point of previous education as established by the standard for admission. Shall that standard be raised? It will close the national school against a large class of citizens, whose poverty or whose places of residence have denied them the opportunities of educating their children, which have been open to others more favored in these respects. Shall a distinction be made, as to the course of studies and the term of service, between those who come to the Academy with different degrees of previous education? That will injure the discipline of the corps of cadets; will create jealousy and ill feeling among classes; and will destroy that character for impartiality towards all, of whatever previous condition in life, which has always been the distinguishing characteristic, as it should always continue to be, of the United States Military Academy. Shall the term for instruction be reduced, and the graduates be sent off but partially educated, to supply their deficiencies at a school of application? That is impracticable. There is no such school, and no probability, scarcely a possibility, of establishing one. At any rate, wait for this till the means of supplying the deficiencies thus voluntarily incurred are provided. But what advantage is to be gained by reducing the term for instruction? The individual must spend his fifth year either at the Academy, as a cadet, or in the Army, as a subaltern. In the former case, that year may be devoted to the acquisition of some useful knowledge, and probably will be. All experience proves that, in the latter case, it will either be wasted and lost to usefulness in future life, or, more probably, be applied, in most instances, to idleness or the acquisition of vicious habits. If there are any portions of the present course of instruction which may be, without injury, omitted or abridged, there are other branches not now sufficiently attended to which may be advantageously substituted for them, such as *practical* reconnaissances, sketching, and topography, and other field duties; the system of accountability for public money and property, and the mode of making out and rendering accounts therefor. The omission of any branch of useful instruction, without which the term of five years at the Academy cannot be abridged, will lower the present high standard of the officers of the Army. The retention of that term, and its application to the acquirement of any useful knowledge, preferably, of course, to such as may be thereafter practically applied in military life, will, in my opinion, secure to the Army, in each of its corps, departments, and regiments, officers best qualified to perform their various duties and to meet all their responsibilities.

Very respectfully, your obedient servant,

W. MAYNADIER,
Captain of Ordnance.

Lieutenant J. C. IVES,
Secretary to Military Academy Commission, &c., West Point.

K.

WEST POINT, NEW YORK,
July 24, 1860.

SIR: In reply to the questions submitted in your communication of the 18th instant, I have the honor to make the following statements:

First. The instruction in the department of infantry tactics is both theoretical and practical.

The theoretical course of elementary tactics, as at present taught, is so nearly perfect as to leave but little to be desired. It is believed, however, that the course of "instruction for skirmishers" can be extended one or two lessons with advantage; "evolutions of the line" being curtailed by the same number of lessons.

In "grand tactics," a few large and well executed maps of modern battles would greatly facilitate the labors both of instructor and cadet.

The course of strategy, as now taught, is believed to be, so far as it goes, the best that could be devised in the present scarcity of good text-books on the subject.

The time given to strategy is, however, entirely too little. The subject is one of the very gravest importance, and in no other branch of the military art is "a little learning" so dangerous a thing.

The time now given is barely sufficient to give the cadet a tolerable knowledge of the principles of the art, while the proper application of those principles, which should be the true object of study, is, and must of necessity be, almost entirely neglected.

It is recommended, therefore, that there be furnished large maps of the most celebrated campaigns, particularly those of our own country, and that this course be extended by at least twenty lessons, all of which will be required to give to the cadet a reasonably accurate knowledge of the application of principles now taught him.

The study of logistics is confined to a few general rules and aphorisms which amount to nothing, as, being unconnected with facts or details, they make no decided impression upon the mind.

I may here, I trust, be allowed to make a recommendation, which, though not coming strictly within my department, I am enabled to make with confidence, as I teach a section in each of these branches. It is in reference to the course in army organization and administration.

The study of Thackeray on the Military Organization and Administration of France, and of McClelland on the Composition of European Armies, however necessary to the accomplished soldier, the statesman, and law-maker, are believed to be of secondary importance when compared to many other branches of the military art, and, as such, do not properly come within the scope of a tuition of a limited number of months, or even years.

My recommendation is, then, that these studies be discontinued; that in their stead, belonging to the same department (artillery), and comprising the same number of lessons, a thorough course of logistics be substituted.

This, comprising as it does all the duties of the staff, is essentially necessary in an army administered as that of the United States, where each officer is liable at any moment to be called upon to perform the most delicate and responsible duties, only, in European armies, devolved upon those especially educated for such duties.

This course, "the art of war," is now taught to cadets of the second class. I believe it would be beneficial to the cadet, and, of course, to the service, to transfer it to the first class.

Second. Method of instruction, theoretical. For convenience of instruction, each class of cadets is divided into sections of ten or twelve individuals.

In elementary tactics the cadet is called to the blackboard and required to explain a movement as prescribed in the lesson. The positions are drawn upon the board, the commands of each and every offi-

cer repeated, the movement of each fraction, and the position of each officer, guide, &c., given in detail.

A reason is required for everything. Care is taken to impress on the cadet the advantages and disadvantages of each movement, and to familiarize him with the circumstances which render one necessary or advantageous over another.

In strategy and grand tactics a somewhat similar course is pursued. The heads of the subject under discussion are written on the board; the subject itself explained and discussed in detail, elucidated by such examples from history as come within the knowledge either of the cadet or instructor. The largest latitude is allowed in the discussion of all subjects that come properly within this course; and each cadet is encouraged to ask any question the answer to which might elucidate any point of the profession.

I believe this system to be as perfect as can be devised.

Method of instruction, practical. On arriving at the Military Academy, the candidates for admission are formed into squads of from three to six individuals, for practical instruction in the school of the soldier. Each squad is in charge of a cadet of one of the older classes, the whole being under the supervision of one of the assistant instructors of infantry tactics.

From the 1st of June until about the 15th of July of each year, the new cadets are drilled, as above described, three times each day, each drill lasting one hour. From the 15th to the 31st of July there are but two drills each day in infantry, Saturday afternoon and Sunday excepted.

From the 1st to the 31st of August, the cadets of all the classes (or the entire corps), organized into two companies, each under the command of an assistant instructor of infantry tactics, are instructed for one hour each morning in the school of the company.

From the 1st of September until October 15th, the corps of cadets, organized as a battalion of eight companies, receives daily instruction in the school of the battalion, under the charge of the instructor of infantry tactics.

From the 15th to the 31st October the companies are instructed, each by the lieutenant of the Army who commands it, in the school for skirmishers.

From the 15th to the 31st March the corps is instructed, as before described in the school of the company; and from the 15th to the 31st May in the school of the battalion.

The cadet officers of the corps are selected for their military bearing and propriety of conduct—the captains and lieutenants from the first class, the sergeants from the second class, and the corporals from the third class. Each cadet, however, is required to perform all the duties of company officer, officer of the day, guard, and police, at least once before graduation.

From the termination of the examination in June until the 31st of August the cadets are encamped, during which time they are instructed in military police and discipline, and military administration, in accordance with the regulations of the Army.

The method of instruction now pursued is believed to be excellent; and the only change recommended is in the apportionment of time for instruction in the various schools. The instruction for skirmishers I believe to be the most important, not only as being peculiarly adapted to our country, but the nature of the service on our Indian frontier, to which most of the cadets are sent on graduation, requires an ample

knowledge of this mode of handling troops. I recommend that the whole month of October be devoted to this instruction.

I am, sir, very respectfully, your obedient servant,

RICHARD J. DODGE.

First Lieut. Eighth Infantry, Ass't Inst. Inf. Tactics.

Lieutenant J. C. IVES,

Secretary of Commission.

L.

WEST POINT, NEW YORK,

July 26, 1860.

SIR: I have the honor to submit herewith my answers to the questions proposed to me by the Commission appointed to examine into the organization, &c., of the Military Academy, and transmitted by your note of the 18th instant.

Respectfully, your obedient servant,

WILLIAM H. C. BARTLETT,

Prof. Nat. and Exp'l Philosophy.

Lieut. J. C. IVES,

Secretary, &c., &c.

Questions and answers.

Question 1. What subjects are taught in your department? State briefly the amount of instruction given in each.

Answer 1. My department is that of natural and experimental philosophy. Its course of instruction consists of mechanics, acoustics, optics, and astronomy.

Mechanics is treated under the heads "*Mechanics of Solids*," of "*Fluids*," and of "*Molecules*." Under the first, after a brief statement of the first elements of physics, are discussed all the laws of equilibrium and motion of connected systems, including the composition and resolution of forces, work, center of gravity, center of inertia, vertical motion of heavy bodies, projectiles, planetary motions, system of the world, perturbations, universal gravitation, impact, simple, compound, gun, and ballistic pendulums. Under the second, the equilibrium and motion of fluids, embracing what was formerly called "hydrostatics," "hydraulics," and "pneumatics"; pressure of heavy fluids, equilibrium and stability of floating bodies, specific gravity, atmospheric pressure, and barometric measurements. And under the third, the formation, figure, and propagation of waves, double wave velocity, molecular orbits, resolution and composition of molecular living force, reflection, ordinary and double refraction, polarization, diffusion and decay of molecular living force, interference, and inflection. And the text closes, under the head of "*Applications*," with a general discussion of the principles of machines and their applications to what are commonly called the mechanical powers and pumps, including friction, adhesion, and stiffness of cordage.

The texts on acoustics and optics, as now taught, are little less than corollary to the mechanics of molecules. Of the former, just so much is learned by the pupil as to enable him to determine the velocity of sound, to measure distances by means of sound, to understand the acoustic principles of buildings, the structure of the ear, and the action

of this organ in the process of hearing—only about four lessons. Of the latter, that is, of optics, the student is taught the principles of chromatics, color by gratings, by the edges of solids, by apertures, by thick and thin plates, and by unequal refrangibility, dispersion, chromatic aberration, achromatism, internal reflection and absorption, rainbows and halos, polarization, double refraction, chromatics of polarized light, theory of the color of natural bodies, as well as the principles and construction of the various optical instruments.

The astronomical course consists of two parts, namely, "*physical*" and "*spherical*." The principles of the former are taught in mechanics, constituting as they do but a special problem, in which the forces are universal gravitation and inertia, and the bodies, the detached masses that move through indefinite space. Spherical astronomy is the subject of a special text, and is composed of three branches. The first is mainly concerned with a description of the solar and stellar systems and the phenomena of the celestial sphere, the computation of the orbits, as well as the actual distances and dimensions of the heavenly bodies, and includes so much of terrestrial physics as belongs to atmospheric refraction, the seasons, trade and other winds, magnetism, tides, and twilight. The second branch relates to the construction of astronomical tables and ephemerides; and the third to the use of these latter in the projections of eclipses, occultations, and transits, and, in connection with data furnished by instrumental measurements, to the solutions of the various problems of geodesy, geography, navigation, time of day, and variation of the compass; and the pupil is taught the whole theory and use of astronomical instruments.

Question 2. Reference being had to the objects for which the Military Academy is established, should the teaching in any of these branches be extended; and, if so, in which, and how far? Should it be curtailed in any way; and, if so, in which and to what extent?

Answer 2. In view of the objects of the Academy, I cannot recommend that the teaching of the subjects above enumerated be either extended or curtailed.

Question 3. What method of instruction is pursued in your department, and are there any changes which would improve it?

Answer 3. By lecture and recitation; and I do not believe that any changes could be introduced with a certainty of any improvement, unless it be an extension of the course of practical astronomy. The pupils come to the study of the course directly from that of mathematics, the language in which alone natural philosophy can be read with any permanent benefit. They begin with the subject of analytical mechanics, the foundation of physics and astronomy, and progress through the texts in the order named in my answer to the first question. They are assigned daily lessons, which are recited at the black-board, and the course is fully illustrated in all its departments by the use of an ample apparatus. Mechanics occupies the interval from September to January; the other subjects from January to June.

Question 4. What practical instruction is given in your department? Should this be extended or curtailed?

Answer 4. The theory of barometrical and astronomical measurements are practically illustrated with portable instruments in the field, and with those of a more stationary character in suitable buildings. The students are taught the use of the barometer, sextant, altitude and azimuth instruments, zenith telescope, variation compass, transit, mural circle, equatorial, and time pieces. The extension of the course

of practical astronomy is very desirable, if time could be found for it; but under existing circumstances this is impossible.

Question 5. How many hours' study should the cadet give daily to be proficient in the course prescribed for your department; and to what extent would this be increased or curtailed by any modification proposed by you?

Answer 5. The cadet should devote to each lesson, at least, four hours, exclusive of those for recitation, and during this time he should be free from all bodily fatigue and mental excitement, except that which may result from the subject-matter of the lesson. The extension I would propose in the course of practical astronomy would require six hours a week additional for six months; a part of this time being devoted to observing, and a part to the reducing of the observations.

Question 6. How many hours daily is each cadet occupied in recitation and in the section room in your department?

Answer 6. In recitation, from ten to twenty minutes; and in the section room, one hour and a half.

Question 7. Is the amount of study in your department such as to overtax the student, regard being had to the demands made upon him by the other departments at the same time? What modifications would the changes proposed by you produce?

Answer 7. The amount of study required does not, in my opinion, overtax the student, except when he is unduly fatigued by his military exercises; but I cannot resist the impression that these exercises, urged out of season and to unnecessary lengths, prevent that repose essential to a retention of the subject-matter of the lessons by the student.

Question 8. Is there any indication of overwork, or of weariness of study, among the cadets in any of the departments in the recitation room or in the examination?

Answer 8. During the spring and autumn the cadets exhibit greater want of preparation than at other seasons; and I infer this to arise from exhaustion consequent upon their military exercises. Cadets have told me, in excuse for their want of preparation, that they had fallen asleep over their books without the possibility of keeping awake. Recreation is essential to a student; and we should be careful to distinguish between the pleasurable exercises suggested by the inclination and those incident to a task, such as drills, riding, parades, and the like.

Question 9. Have you any modifications or changes to suggest—not embraced in the answers to the foregoing questions—respecting the course of instruction that would, in your opinion, conduce to the better accomplishment of the objects of the establishment of the United States Military Academy?

Answer 9. In my opinion, the programme of studies is defective. It is too full for the time, and cannot be taught thoroughly, or with any certainty of realizing for it the ends of education. It is much better suited to a class of students who have had the usual preparation for entering college than for new cadets, such as come to the Academy now-a-days, with scarcely the rudiments of common-school instruction. The programme should be reconstructed, and by persons skilled in the business of teaching, and who are at the same time aware of the educational necessities of the Army. The great want of the Academy is, in my opinion, thorough elementary training in the English language. In the absence of a higher standard for admission, the first year of the cadet should be devoted to an elementary course consisting of reading, composition, grammar, and the elements of mathematics, free from the hinderance of excessive physical exertion. The pupil should be patiently

taught as well as examined. We have too much of examining and too little of teaching. It is not enough to give a lesson one day and ask questions about it the next; but the subject should be explained and illustrated in every variety of ways to bring it to the clear and definite apprehension of the student. In a word, the pupil should be made to make the lesson his own. The first year should be the important one for the cadet, and at its close he should be retained or rejected according to the evidence of capacity and proficiency as determined by a searching examination. The first year well passed, the difficulties would be ended. The course of instruction should be thoroughly scientific, and the same for all; and when a class graduates it should be distributed among the different regiments, and made to serve with troops. All vacancies in staff corps should be open to competition from the line of the Army, and filled by selection after an examination of the competitors by a competent board. This would extend the incentives to professional improvement beyond the walls of the Academy, and secure for the staff the best talent of the Army. It would reflect back upon the Academy the happiest effects. As matters now stand, a youth who receives a cadet appointment and gets through the institution is assigned to a special arm of service, and falls into a place upon a graduated scale, to be carried forward by the force of mere Army routine; and, in the absence of personal ambition, has not a single motive to exertion. The tendency of the present system is to break down a scientific academy, and to erect upon its ruins a school of practice; to make the institution more attractive to pleasure-seekers than useful to science and the Army. There is too little of repose, and too much of parade and show.

In connection with this subject I would respectfully refer to my answers to questions proposed by a former board now in your possession, and marked C and E; and also to other answers embodied in the report of that board.

WM. H. C. BARTLETT,
Professor Nat. and Exper'l Philosophy.

M.

WASHINGTON, *July 26, 1860.*

SIR: After a short absence from this city, I yesterday found your letter of the 18th instant, in which you request me "to state what modifications or changes in the organization and course of instruction at the Military Academy are, in my opinion, desirable."

I have studied the subject of instruction so little that it is improbable that any suggestions of mine will be of use to the Commission; and my knowledge of the course of instruction at West Point is not sufficiently minute to enable me to go into details. My ideas of the merits and defects of the institution are derived rather from intercourse, official and personal, with the young officers of the Army, than from observation of the school.

With the present qualifications for admission, the term of five years is, in my opinion, not too long. It would be much better, however, to require young men to enter the Academy with an amount of education equal to that which they now have at the end of the second year, to reduce the term to three years, which would greatly diminish the cost of each officer's education, and to make the school more purely military.

The government of the Academy, I respectfully suggest, should be exclusively military, and the Academic Board be composed of officers of the Army.

The discipline seems to me to be unnecessarily severe. It should be adapted more to its object—forming the habits of lieutenants. The difference between the life of a cadet and that of an officer is too great—greater than that which a promoted private soldier would find. There are too heavy regulations, and too much minuteness in them. The mode of punishment by demerit is, I think, ineffective, the consequences being too remote and indefinite to produce apprehension in careless minds. Discipline would be enforced more thoroughly, it seems to me, by immediate punishments, such as are used elsewhere—confinement, suspension of privileges, &c. If I understand the system pursued at the school of St Cyr, it is of this sort.

One of the important objects of education is to give habits of judicious reading. The present academic course is not calculated to do so. The abstruse sciences, to which the time of the cadet is mainly devoted, can, in after life, interest none whose pursuits do not require their frequent application, and therefore officers of the Army generally do not retain their school habits. The time given to mathematical studies seems to me too great. A portion of it might, with great advantage, be applied to military history—the most useful of studies for a young soldier—giving professional knowledge, a taste for reading, and high ambition.

The military course under the commandant of cadets ought to be much enlarged. Decker's "*Tactiques des Trois Armes*" is, I say it with deference for those who selected the text books now used, more instructive to young students than Jomini's *Art of War*. It gives more accurate ideas of the manner of drawing up troops for action, either in large or small bodies, each arm separately or the different arms combined. It should be studied by the first class, but should be preceded by works on out-post service and partisan operations, of which there are many in French, by men who have studied as well as fought. I especially recommend for this course three little works by Frederick the Great—"Instruction destinée aux Troupes Légères," "*Instruction Dérobée*," and "*Instruction Militaire pour les Généraux*." It seems to me, too, that the study of the organization of the French army might be postponed, and the time now employed upon it bestowed upon other military reading.

Instruction in fencing should be carried far enough to give a taste for the exercise. It should therefore be continued *at least* one year more.

Very respectfully, your obedient servant,

J. E. JOHNSTON,
Brigadier-General, U. S. A.

Lieutenant IVES,
Secretary Military Academy Commission.

N.

MIDDLETOWN, CONNECTICUT, *July 26, 1860.*

SIR: Yours of the 23d instant came to hand this morning, and I hasten to reply to the three questions numbered one, two, and three, as follows:

First. "What modifications, if any, of the present mode of assigning cadets of the United States Military Academy to corps or arms would, in your opinion, be better adapted to the purpose of securing to each branch of the service the highest special qualifications, and, to the Army, the greatest efficiency?"

Answer. I have always understood that cadets were recommended

by the Academic Board as qualified for certain corps or arms of service, and that the cadet was allowed to apply, notwithstanding this recommendation, for any corps or arm of the service that he fancied on graduating, and that the President of the United States had the discretion to comply or not with the application of the cadet, provided he would not thereby be assigned to a corps or arm of the service for which the Academic Board did not think him qualified.

Here we have the qualification of the cadet, and the particular taste of the cadet, for an arm or corps of the service. If both coincide, then the office is filled to the greatest perfection; and if the cadet's taste leads him to an arm or corps inferior to that he has been pronounced qualified for, then that corps or arm is benefited by superior attainments, and no damage is done the service by forcing a cadet to the performance of a duty he has no taste for.

I do not see how there can be, under the imperfections of all worldly things, any improvement here, as I understand the case.

Second. "To what extent, if at all, would it be advisable, in your opinion, to require officers to serve in different corps or arms?"

Answer. The answer to the first question is almost an answer to this. If an officer be commissioned in the corps or arm of the service for which he is best qualified and fitted, no other officer can be ordered to take his place in rotation and perform the duty so well. Nothing but the necessity of the case should bring about a change by ordering an officer qualified and drilled to a particular corps or arm of the service to perform the duty which he has not been accustomed to do. The service and the country would suffer by such a proceeding.

The only place in the service where such an indiscriminate use of the service of a person can be tolerated is at West Point as cadets; for here they are instructed in all branches, and here their peculiar qualifications for particular branches of the service should be brought out by requiring of each cadet his tour of duty as an instruction to him.

Third. "Do the graduates of the United States Military Academy, so far as you know or believe, generally pursue their professional studies after entering their respective corps; and can you suggest a method which would, in your opinion, further stimulate to useful emulation and professional improvement among the junior officers of the Army?"

Answer. In the Army, as well as all other professions, there are all sorts. Some take a great pride in carrying out their knowledge practically, as is the case in the Corps of Engineers and Topographical Engineers, and the Ordnance and the line of the Army. There is great merit among the officers as a body, and the graduates are all competent in their respective arms or corps. I would here recommend, however, that the young graduate *in the line* be sent to the school of practice for the particular arm to which he belongs for one year, at least, on leaving the Academy, where he will be brought in contact with the enlisted men of the Army and at once commence a career of usefulness to his country. Theoretical instruction is but the first step to great practical operations, and hence the advantage of an educated mind at the Academy.

And here I will remark that the commanding officers of the schools of practice, of artillery, cavalry, and infantry, should be active and accomplished officers of experience in their particular arms, and of habits and principles worthy of imitation by the young officer.

All of which is respectfully submitted to the Commission.

JOS. K. F. MANSFIELD,
Colonel and Inspector-General, U. S. Army.

LIEUT. J. C. IVES,
Secretary of the Commission, &c.

O.

FORT HAMILTON, *July 26, 1860.*

SIR: I have received your letter of the 18th instant, requesting me "to state what modifications or changes in the organization and course of instruction at the Academy are in your [my] opinion desirable to secure to the Army officers best qualified to perform their various duties, and to meet all their responsibilities."

My knowledge of the course of instruction at the Military Academy is not such as to warrant the expression of an opinion on the subject finally; but the experience of some three years' course, and of the artillery school, and of a recent tour of inspection to some of the military forts in the eastern department and in Texas, has impressed me with the conviction that the objects contemplated would be promoted by requiring graduates of the Academy (those of the staff corps excepted) to spend one year at one of our military posts, established as a school of instruction, before joining their respective regiments, and that for this purpose it would be desirable to reduce the studies at the Military Academy to a course of four years.

Consequent on the great extent of our frontiers, the smallness of our Army, and the manifold requirements of the service, it is necessarily broken up into very small detachments, of rarely more than one or two companies, precluding the probability and almost the possibility of any very extensive advance in science, or a knowledge of his profession, by the young graduate after he joins his company. It is therefore of the very first importance to his future usefulness, that before joining he be possessed not only of correct military principles, but of a practical knowledge of duty, and of the command of men; and these cannot be acquired at the Academy, and it is apprehended are not properly taught either on our sea board or on our remote frontiers.

I would then respectfully suggest the establishment of schools of instruction for infantry and the mounted corps, similar to the artillery school at Fort Monroe. That the graduates of the Military Academy be required to spend one year (instead of the present fifth year) at the schools of their respective arms, and that they shall not have their relative rank to their own corps finally determined until after they shall have been one year at "school," when it shall be determined by their standing both at the Academy and school. That is, that their Military Academy rank, so far as it relates to the Army and to their standing at the school, shall be good, until the expiration of the year, when, so far as relates to their own arm of service, their relative standing may be changed by merit or demerit at the school.

A school somewhat similar to those suggested for the infantry and mounted corps (with the artillery) has been established and is now in operation at Fort Monroe, and, although laboring under very many disadvantages, arising principally from the want of an efficient organization, and especially of legislative sanction, its usefulness has been, I trust, satisfactorily established, and, if fostered by government, and efficiently conducted, will, I am confident, secure to the Army officers well qualified to perform their various duties and to meet all their responsibilities.

All of which is respectfully submitted.

I am, very respectfully, your obedient servant,

HARVEY BROWN,

Breret Colonel, United States Army.

Lieut. J. C. IVES,

Secretary U. S. Military Academy Commission.

P.

WASHINGTON, *July 25, 1860.*

SIR: I have received your circular letter inviting opinions to be laid before the Commission.

I think the Academy as it now is an excellent institution for its purposes, and that no radical changes should be attempted in it.

I think the fifth year will be of great value to the academic term, and that it should bring into the course of studies the Spanish language, the history and art of war, military law, and the rules of evidence of the common law, and give cadets some time and opportunity for general reading, which heretofore they had not in the course of science they had to accomplish in four years. The scientific education pursued at the Academy has aimed at a special object. A more liberal course of study has always been preferred for the general purposes of life. A great and learned man who knew the systems of education from Socrates down to our day, was of opinion that the "*works of orators, historians, and poets*" furnished the best course of scholastic study. Undoubtedly they make a useful part as well as the ornamental part of education. But they are attractive enough of themselves, and need not, I suppose, be given to the scholar as part of his set task. On the contrary, he is likely to get the best advantage from them in the free use, according to his inclination, of a good library, if he will only follow the rule to read much rather than many things. I would not, therefore, propose to introduce general history and literature into the text books and class studies of the Academy; but to take advantage of the fifth year, and as one of the great benefits to be derived from it, to enable the cadet, in the way intimated, to pursue those studies, to some extent, for himself. He will acquire from them a love of letters and study, which text books of science do not give to most minds, and which will influence the tastes and habits of life.

I think metaphysics, ethics, theology, logic, and rhetoric had better be omitted from the studies of the Academy, except, perhaps, so much as may show what they are. Whether there is too much of the mathematics and exact sciences in the present course, or whether there has been of late a tendency the other way to lower the standard of science, and give a school of science a bad turn to a school of practice, are points on which I venture no opinion.

I suppose it is not possible to put any Latin into the course, though Latin be the best part of an English education.

As the Academy is our only school of engineers and artillery, the sciences required by those corps should be taught to all who take the diploma. To have the officers of an Army so educated, where it can be—as in a small Army it may—is a great advantage, and one peculiar to our service. How far the practical instruction in engineering and artillery, which belongs to schools of application, can be given in a school of science and theory, without more loss than gain, will always be a matter of difficulty to adjust.

In regard to the course of instruction, I can only submit these general opinions, too general and indefinite to be of much value.

On the organization, I desire to submit opinions only on two points:

1. That the superintendency ought to be kept and confined to the Engineer Corps. By law it is so now, has always been so, and I know of no necessity or good reason to change it.

The engineers being the highest department of military science, and that which, in some measure, embraces the rest, it appeared fit and

proper to place the institution where that science is taught under the direction of that corps. The bureau of the corps, in the War Department, has been a convenient authority for the administration of the discipline and finances of the institution.

It has been suggested that more capable men for administration and government might be got by selection from the whole Army. There are very capable men in the Engineer Corps, as might be supposed from the way it has been constituted. The post of commandant has been open to the whole Army, and the commandants have not been as capable men as the superintendents. "Everything in France degenerates into an abuse," said Marshal Soult in his official commentary, when Minister of War, on the regulations he published to the French army. If the appointment of Superintendent is thrown open to selection in the Army it will become subject to political and personal influence; or the best we can hope for will be that it will be given to military services to the best soldier. But even then the fit qualifications for the office will be lost sight of. For it is not the office of the Superintendent to train the cadets in discipline and military exercises; that is for the commandant, selected for this purpose from the line; nor is it a chief object of the Academy to exhibit a disciplined and well-trained battalion, it is a school of the military sciences. The Superintendent is the head of a school of science, the chief of the Academic Board. He ought to be a scientific officer, capable of taking the general direction of the Academy. On the whole I cannot doubt but that, if the institution is to be continued for the object it was established for, it ought to remain under the administration of the Engineer Bureau of the War Department, and be superintended by a competent officer of engineers. The original organization, and what is now the organization according to law, provides and allows only officers of engineers, and the professors and cadets, to make any part or have any function in the Academy. It will be better, I think, to return to that scheme of organization, and exclude from it all officers but engineers, than to have any but an engineer at the head of it. A liberal education in the schools and colleges of the country would prepare officers for the infantry and cavalry.

It has been suggested that as the act of 1858 gives the Superintendent local rank of colonel of engineers, any officer being appointed becomes an officer of engineers, and satisfies the law of 1802, that the Superintendent shall be an officer of engineers. I think the argument untenable. The law of 1802 is not repealed. The condition precedent still stands. The act of 1858 evidently recognizes and continues it. But if not, and the mere appointment makes an engineer, and satisfies the law of 1802, then any citizen may be made Superintendent. There is no law preferring an officer of the line to a qualified citizen.

It has been argued that the Academy is to produce soldiers, not scholars; that a distinguished soldier at its head would exert a moral influence in forming the character and sentiments of the cadets. I don't think there is much in that idea. That sort of impression is likely to be feeble; more engaging examples of excellence will be found in history and romance. The influences that impress the imagination cannot be provided or regulated; the test at the Academy has been scholarship, according to that, the graduates take promotion and rank in the Army. There is no other test of their soldierly merit and fitness to be officers. We come back, therefore, to the idea that the Military Academy is a school of science; that its aim should be scholarship, and that it should be controlled by influences conducive to that end.

2. The other point I have to suggest relative to organization is that

the necessary details from the Army for the Academy ought to be allowed, and regulated by law. Only one assistant professor in each department is now allowed by law, and in some they have many. The law ought to say how many. They ought all to have the same compensation, and the term of the detail ought to be limited by law. As the cadets are never encamped more than two months a year, the law directing three months had better be repealed.

In regard to the demerit system, I think, after much reflection on that subject when I was on the board of officers to revise the regulations, and from consultation with other officers since, that perhaps the whole matter had better be left where the regulations of 1857 leave it. The subject is not without difficulty, and no system can be devised which may not be abused in practice. I suppose the appeal from the Superintendent to the Academic Board may be found inconvenient. And I think, certainly, that a cadet, by being convicted by a court-martial, should not stand better on the merit roll than if he had not been tried. The question is of relative merit in a class.

Respectfully, your obedient servant,

J. F. LEE,

Brevet Major and Judge Advocate.

Lieutenant J. C. IVES,

Secretary United States Military Academy Commission.

R.

WASHINGTON, D. C.,

July 27, 1860.

SIR: In compliance with the request of the Commission, instituted by virtue of the eighth section of the act of June 21, 1860, making appropriation for the support of the Army, I respectfully submit the following remarks:

The subject of education, so as "to secure to the Army officers best qualified to perform their various duties and to meet all their responsibilities," is one that has engrossed the highest ability of most of the nations of Europe.

Various plans have been and are in trial, and it would be presumptuous in me to give information to the "Commission" on the general subject. A full report on the subject of military education will be found in the report of the commissioners (British) appointed to consider the best mode of reorganizing the system for training officers for the scientific corps, together with an account of foreign and other military education, published in London in 1857.

Taking it for granted that we are to have but one school (military) to prepare officers for our Army, the principle that each candidate should, to a certain extent, receive a scientific education appears to me sound, and the system adopted at West Point well chosen.

A great advantage would be gained by the cadet entering the institution with a greater proficiency in a plain English education, and a plan might be devised to effect this object. The appointment of the cadet, say, one year before joining the Academy, might, in this respect, prove beneficial.

The encouragement of all athletic exercises at the institution, and discouragement of sedentary life, particularly during the winter months, would bring a higher degree of physical life and enterprise into the

Army. Some knowledge of army accounts would be very beneficial, and should be acquired even at a loss of some of the scientific theoretical discussions. Less rigid application of "reports" and "demerit" would, I think, do no harm.

Much has been said of the propriety of throwing open the selection of the Superintendent to the whole Army, and at a first glance this would seem to carry with it advantages only; a closer examination will show many disadvantages, one of which would be the withdrawal of that strong support the Superintendent, in his difficult and delicate duties, has received from the Chief Engineer. The Academy has acquired its present high reputation under the Superintendents from the Corps of Engineers, and surely it will not be pretended that the corps has not within it at the present time as high an order of merit as ever before. I therefore see no necessity for extending the field of selection, particularly now that the local rank the situation confers allows the choice to be made from any grade.

In conclusion, such is my impression of the system adopted at West Point that I should deem any wide departure from it a misfortune to the Army.

Very respectfully, your most obedient servant,

ALEX. E. SHIRAS,
Captain, C. S.

Lieut. J. C. IVES, *Topographical Engineers,*
Secretary to Commission, West Point, New York.

Statement showing the number of cadets who have graduated from the United States Military Academy, and the number who entered each class, from 1821 to 1860, including those turned back, &c.

First period.				Second period.				Third period.				Fourth period.			
Class of—	Number of graduates.	Number who entered class.		Class of—	Number of graduates.	Number who entered class.		Class of—	Number of graduates.	Number who entered class.		Class of—	Number of graduates.	Number who entered class.	
1821.....	24	55	1831.....	.....	33	97	.....	.....	52	115	.....	.....	42	74	.....
1822.....	40	115	1832.....	.....	45	107	.....	.....	56	111	.....	.....	43	81	.....
1823.....	35	86	1833.....	.....	43	109	.....	.....	39	76	.....	.....	52	89	.....
1824.....	31	67	1834.....	.....	36	89	.....	.....	41	84	.....	.....	46	90	.....
1825.....	37	77	1835.....	.....	56	92	.....	.....	41	114	.....	.....	31	71	.....
1826.....	41	106	1836.....	.....	49	101	.....	.....	59	109	.....	.....	49	90	.....
1827.....	38	106	1837.....	.....	50	106	.....	.....	38	69	.....	.....	38	83	.....
1828.....	33	79	1838.....	.....	45	63	.....	.....	38	75	.....	.....	27	47	.....
1829.....	46	103	1839.....	.....	31	74	.....	.....	43	81	.....	.....	22	56	.....
1830.....	42	91	1840.....	.....	42	94	.....	.....	44	103	.....	.....	41	80	.....
Classes from 1820 to 1830.....	367	885	Classes from 1830 to 1840.....	.....	430	942	.....	Classes from 1840 to 1850.....	435	928	.....	Classes from 1850 to 1860.....	394	761	.....
Per et. graduated from 1820 to 1830, 41 83.177			Per et. graduated from 1830 to 1840, 45,305.471				Per et. graduated from 1840 to 1850, 46 7.8					Per et. graduated from 1850 to 1860, 51 589.761			

ADJUTANT'S OFFICE. MILITARY ACADEMY.
West Point, New York, July 28, 1860.

RICHARD DELAFIELD, Colonel of Engineers,
Superintendent Military Academy.

T.

I have the honor to submit the following answers to the questions propounded to the commandant of cadets by the United States Military Academy Commission, and in the order in which they were proposed.

I. The only changes or modifications in the organization of the academic staff, or in the appointment of the members thereof, which, in my opinion, would be desirable, are, that no officers should be ordered on duty in the tactical department until they had served at least five years with their regiments, and all others at least three years; and that the superintendency of the Military Academy should be thrown open to the Army. It is obvious that no officer should return here on duty until he has seen some field service or duty with his regiment or corps, and in the tactical department until all the cadets who were with him at the academy have graduated. The superintendency is now confined to one corps. High scientific attainments are not indispensable to his duties, but high rank, experience, administrative ability, and habits of command are indisputably necessary, and these cannot always be obtained by limiting the selection to the Corps of Engineers.

II. The present system of appointing cadets is objectionable, but whether a better could be devised is questionable. I have none to propose.

III. The present mode of recommending and assigning cadets to the different corps of the Army I think objectionable and degrading. When a cadet receives a diploma he is supposed to be fit for any corps in the Army, yet some are recommended only for the mounted corps and the infantry, and are virtually told that they are considered unfit to command or do duty in any other branch of the service. It is true that some graduates are better qualified for particular corps than others; this is natural, but this fitness does not depend alone on class standing, which is the only criterion by which the Academic Board is guided in their recommendations. I don't know that they could have a better, for, with all due respect to my colleagues, they are not supposed to know what requisites are necessary, beyond class standing, to constitute a good officer in the field. They certainly do know whether a cadet is proficient in drawing, and whether he understands the motion of the heavenly bodies, but how can they determine whether he has those particular elements of character which will best fit him for *this* or *that* particular arm of the service? It is impossible. The Academic Board should therefore make no recommendations whatever, and no assignments to corps should be made until all the graduates have served three years in the line of the Army. The staff corps should then be open to competition, and all who wish should be re-examined with that view.

IV. Under the head of discipline, I would respectfully call attention to the following order from the Secretary of War, which, in my opinion, ought to be abrogated. The order reads as follows:

“WAR DEPARTMENT, April 12, 1860.

“The following regulation will be published immediately on its receipt at the Military Academy, for the government of all concerned, and all existing regulations inconsistent therewith are hereby repealed:

“I. Hereafter all subjects which enter the estimate of class standing shall be matters of examination by the Academic Board.

“II. In making up the conduct rolls, only such demerit marks as are given for violations of published regulations shall be taken into account.

“III. Whenever a cadet shall be tried for an offense by a court-martial the demerit marks for such offense shall be canceled.

“IV. Whenever a cadet shall feel himself aggrieved by a decision affecting his demerit account, he may appeal from such decision to the Academic Board, whose duty it shall be, at the end of each month, to consider and decide upon all such appeals.

“JOHN B. FLOYD,

“*Secretary of War.*”

Which order, in its operation, has been injurious to discipline. I forbear comment; the order is referred to the attentive consideration of the Commission.

The code of regulations for the government of the Military Academy is admirably calculated to serve the purposes for which it was framed. I have no alteration or amendment to suggest. But no code can be effective unless it is rigidly enforced both here and at Washington. We have faithfully endeavored to do our duty; but I regret to say that the authorities have not been properly sustained by the present head of the War Department. The result has been injurious to the best interests of the Academy.

V. Since the adoption of the five years' course of instruction, the first class have had all the privileges and indulgences which, in my opinion, they ought to receive. The first class privates are excused from guard duty in camp and in barracks; they perform only the duties of officers in camp, and are required to go to company drills only when they have, in their turn, to perform the duties of officers. Last year the first class had permission to visit the library when it did not interfere with their other duties, and in granting permits and indulgences I always discriminate in favor of that class. I have done all in my power to elevate their position. I should be pleased to place them in a transition state, from the warrant to the commissioned officer, but some of us know how difficult it is for a graduate even to divest himself of his cadet feelings and sympathies; and I have not been able to see clearly how the transformation could be accomplished. If higher emoluments should be granted to the first class with greater privileges than those I have enumerated, and they should live in barracks in constant association with the other cadets, I fear their example might be pernicious, and their rooms a lounging place for the vicious and idle.

VI. I instruct in artillery, cavalry, and infantry tactics, equitation, or the veterinary science and art, out post duty, strategy, grand tactics, and army organization and administration. These different subjects are taught principally from text-books. Lectures are given in strategy and in equitation.

VII. My experience of the last year has led me to the conviction that army organization and administration might be omitted with advantage from the course, and the subject of strategy enlarged. All the subjects taught by the commandant ought to be transferred from the second to the first class. These branches would seem to be an appropriate and agreeable termination to the course of instruction of the cadet in the military profession. In strategy the instruction should be given partly by lectures; and the question presents itself whether these lectures should be delivered by the cadets or the instructors. If the course of instruction be transferred to the first class, I have no hesitation in saying that they ought to be given by the cadets. The principles of strategy are few and simple, and, once understood, can be applied in the illustration of a campaign as well by the pupil as by the instructor

The necessity for military reading, for thinking, and for writing, which the preparation of a lecture necessarily requires, would be of great advantage to the cadet, who, from the nature of his studies, has few incentives for the improvement of his style or for historical research.

VIII. I do not believe the present course of instruction excessive, nor do I believe that it gives the cadets an unnecessary amount of leisure. I think, however, that a cadet should not be required to recite more than two lessons a day; and a programme of studies arranged on this principle would be an improvement.

IX. I have no modifications or changes in the regulations or the administration of the Academy to suggest, which would, in my opinion, conduce to the better preparation of the cadets, physically, morally, or intellectually, for the duties of officers of the Army.

In this connection it is proper to remark that in spring, summer, and fall the military exercises are sufficient for the physical development of the cadets, and in winter they can resort to the gymnasium, or to a room where music is provided, and where those who wish can dance.

X. I have always been in favor of a four years' course of instruction. When I remembered how irksome the life had been to me here, how distasteful the studies, and how happy I was to get away at the expiration of four years, I confess I was unwilling, by any act of mine, to continue or to extend the course to five years. When the subject was under consideration by the Hon. Jefferson Davis, then Secretary of War, I recommended schools of application as a substitute for the additional year; and I have had no cause since then to change my views. The majority of our young men enter the Academy over eighteen years of age, or between eighteen and twenty-one; and if a young man enters at twenty-one, he will graduate at twenty-six, which is much too old to commence a career in which he cannot hope to be a captain under fourteen years' service, or before he is forty. If the five years' course be continued, I would recommend that the age for admission be changed, and that no cadet be permitted to enter over nineteen years of age.

I grant that if the course should be changed to four years that several subjects now taught, and which are important, would have to be omitted. I refer more particularly to the Spanish language and to strategy. But could not this deficiency be supplied by raising the standard of admission? If this cannot be done, ought not a graduate, with the solid foundation laid by a four years' course, and with leisure at his command, be able to build a superstructure suited to his wants and tastes? On the other hand, I fear that the five years' course, with the mental labors required, and the restrictions imposed, might have the effect of creating a distaste for books; and the graduate might be so satiated with study as to leave but little inclination for further improvement.

I am of opinion that whenever an officer of the Army is selected to fill a vacant chair at the Academy that he should retain his commission in the Army, and when promoted to a majority that he should be required to vacate his professorship and return to the Army. This would have the effect of keeping up a sympathy between the Army and the professors, and would always secure efficient professors at the Academy. By allowing the professors to remain here an indefinite term of years, and by dissolving their connection with the Army, the danger is that they might lose sight of the great object of the institution, which is to make soldiers, and if they controlled the Academy, to which there is a

tendency, that we might have in name a great military institution without the necessary military elements to give it effect.

I am also of opinion that the professors should be required to teach; that their duties should not be confined to a mere supervision of their classes, but to each a section should be assigned, which should be under his immediate instruction. The professor of mathematics and the professor of ethics might be exceptions to this rule, in consequence of the number of classes under their control, and the impossibility, if they did, of complying fully with section forty-two of the Academic Regulations, which requires the professor to "ascertain the proficiency of the sections intrusted immediately to their assistants, the relative merits and qualifications of the cadets of the whole class, and the manner in which the assistants have performed their duty." With respect to the other professors, I see no reason why they cannot teach and still comply with this regulation.

I am of opinion that the commandant of cadets should be next in rank to the Superintendent on the Academic Board. The present regulation on the subject, section 8, Academic Regulations, reads as follows: "The members of the academic staff shall take rank as follows: First, the Superintendent; second, the commandant of cadets, if a field officer, and the professors of the Academy, according to the date of commission." This regulation, it will be remembered, was made before the passage of the law giving the local rank of lieutenant-colonel to the commandant, and it was framed on the supposition that he would never be of higher rank than a major, which is the assimilated rank of the professors. But the law has given him additional rank. The regulation, however, has not been changed, and the commandant still takes rank, although a lieutenant-colonel, with the professors, according to the date of commission.

Respectfully submitted.

W. J. HARDEE,

Lieut. Col., U. S. A., Com. Cadets.

Lieut. J. C. IVES,

Secretary U. S. Military Academy Commission.

U.

WEST POINT, NEW YORK,
July 25, 1860.

SIR: I have the honor to acknowledge the receipt of your letter of the 18th instant, with the inclosed questions.

In answer to question 1, whether the instruction in cavalry should be curtailed or extended, &c., I have to say that the theoretical instruction in section-room might be extended with advantage—say ten or fifteen lessons, the practical instruction remaining as at present constituted.

With regard to the method of instruction now pursued, and any modification called for in question No. 2, I have to state that it is divided into theoretical and practical. The first is embraced in forty-six lessons in cavalry tactics, veterinary art, and out-post service. I have recommended above that ten or fifteen additional lessons be added to veterinary art.

The method of instruction is that usual here in other departments—that is, recitation at the board or with the models, with occasional lectures by the instructor.

The practical instruction commences the third class year in equitation on the plain or in the hall, and is continued during the academic terms till graduation. The chief aim is to make good horsemen, though a practical knowledge of tactics is also gained. Leaping hurdles and ditches, racing, saber and pistol practice (with blank and ball cartridge), running at the heads, &c., is diligently pursued the last or first class year. I know of no modifications which are not within the discretion of the instructor that would improve the course.

I am, sir, very respectfully, your most obedient servant,
CHARLES W. FIELD,

Assist. Inst. Car., U. S. Mil. Academy.

Lieut. J. C. IVES,
Secretary Commission, &c.

V.

Promotion in each arm should be by regiment, and in the staff corps by corps, to a majority.

When a vacancy occurs in the grade of first lieutenant of a regiment (and the same for the several corps), every second lieutenant of that regiment or corps, of two years' standing in his grade, shall be allowed to compete for the vacancy before an examining board provided and constituted as hereinafter stated.

When a vacancy arises in the grade of captain in any regiment or corps, the first lieutenants of that regiment or corps, of at least three years' company or regimental service in that grade, shall compete for the vacancy before an examining board constituted and organized as hereinafter stated.

On a vacancy arising among the majors of a regiment or corps, the captains of that regiment or corps, of at least five years' service with their companies, shall compete for the position before an examining board as afterwards stated.

The lieutenant-colonel shall succeed to the vacancy of colonel, and the senior major to that of lieutenant-colonel, in case of a vacancy in that grade. If from any cause these men have become incompetent for their positions or for promotion, they shall be retired from the Army and make vacancies to be filled by promotion.

The examining board for promotion shall be appointed by the Secretary of War ordinarily; but, in time of war, the commanding general of the Army, in the field or in a foreign country, may appoint for promotions as high as the rank of captain, inclusive.

For the examination of second lieutenant, the board shall consist of one first lieutenant, one captain, one field officer (in case a competent field officer cannot be found in the regiment, of two captains), and of three suitable officers from other corps of such ranks as not to be prejudiced by the promotion; that is, not to be first lieutenant in rank.

The commanding officer of the regiment present with it will preside over the board. It will thus be composed of seven members—four officers of the regiment or corps to which the candidates belong, and three other corps or regiments. (In the case of the engineer, if this should be applied to the engineers, the members may be all in that corps.)

To examine first lieutenants for captains, two captains and one field officer from the regiment, and three officers (captains) from other corps, presided over by the commanding officer of the regiment or corps.

To promote captains to a majority, there should be a special board, composed of five officers of such rank as not to be prejudiced by such promotion, and, if possible, two should come from the regiment.

A board or commission, appointed by the President, shall draw up a basis or syllabus of subjects and a groundwork of the examination for each particular, and for each separate arm and each special corps; and the law shall require this basis to be revised at least once in ten years, for the purpose of modifying it as experience may suggest.

This commission shall determine the general outline and elements of the examination, and fix the count of each element or subject which enters the estimate for standing, somewhat as follows:

Tactics of the special arm, and an explanation of the process of converting one or more recruits into soldiers, soldiers into companies, and companies into regiments.....	300
Army regulations, articles of war, and orders, &c., relating thereto; decisions affecting customs, &c.....	300
Courts-martial, their proceedings, and everything relating thereto.....	300
Distinguished service, as gallantry before the enemy or in perilous positions, to be adjudged by the board.....	300
Meritorious service, as faithful company service on the frontier, regimental service on the frontier, commended service on an ordnance expedition, faithful and marked service in any staff, position, or military service of any kind, where discretion, abilities, or high qualities are shown.....	300
Spanish language.....	100
French language.....	100
German language.....	100
History.....	100
Knowledge of small-arms and skill in their use.....	100
Riding.....	100

In case of doubt, where there appears to be equal merit, the evidence of the captains and other commanding officers shall be taken to determine which has exhibited most professional zeal and aptitude in the line of his duty, &c. (This will encourage subordination and efforts to win the good opinion of superiors.)

At each examination the relative merit of all persons examined shall be determined, and a list sent to the War Department for the information of the government and use, in case of death or resignation, directly after promotion. This formation would be valuable in detailing other duties.

First lieutenants, when examined for captains, should be subject to examination upon all the course included in the grade of second lieutenants, and, say the following or something like it, in addition: On fort service; the service of advance and rear guard and flankers; convoys under all the peculiar circumstances of *our service*, as well as foreign; marches of all kinds, and particularly of small bodies of troops in Indian country; encampments; bivouacs; passage of mountains, streams, and obstacles of all kinds; a knowledge of transportation, particularly for a company and for ten companies; how to make requisition for all supplies for a company.

Field fortifications, attacks and defense of small posts, buildings, inclosures, &c.

Captains, when promoted to a majority, say in the infantry, to be examined in addition to the foregoing in strategy and military history,

grand tactics, army organization and administration; the attack and defense of positions in the field, with all the arms and with different combinations of the three arms or with one alone; orders of battle, to dispose troops for battle in various positions; the tactics of the three arms; the composition of all corps and parts of the Army, and the organization of the armies of the five great European powers; details of the duties of post and regimental commanders; post returns with every corps represented; regimental returns; explain regimental records, &c.; the theory of the punishment of soldiers; powers of a commander of the post in connection therewith, and ordering courts, carrying out their sentences, as to what relates to discipline and responsibility, &c., as may be thought best in such connection by the board to define such examination.

This will raise the moral of the line regiments, particularly since higher graduates will go into them for the sake of rapid promotion. Secured to merit, it will keep the incompetent in subaltern grades, and the objection to full promotion from the ranks will be removed.

Further, graduates will not discontinue their studies when they enter the Army.

If the subjects on which second lieutenants are to be examined are studied in the Army, it is probable that more correct notions will be obtained than at the Academy, where the subjects of courts-martial are taught by a person who knows nothing thereof, practically, and the regulations, and many other things by those who could have seen no practical service. On this account cadets often carry away ideas which have to be unlearned, or discarded, which shakes their confidence in their education generally at the Academy.

If competition for promotion cannot be secured, the next thing to it, in my opinion, is to examine previous to promotion anyhow, and that those who do not come up to a fixed standard, be unhesitatingly overhauled, and the next tried, and so on until the individual is reached. There will, however, in this case only be study sufficient to pass, for the motive for going further is removed. Neither will this lead high graduates to enter the lower arms of service. If it be considered too much that all promotion be open to competition, I would then open one-third or at least one-fourth, and it may produce good enough results and not discourage many worthy men who want good pay but do not expect to be generals.

Would it not be well for the general staff officers to compete for their positions, at least half of them, in order to stimulate the graduates and to get the best talent in that part of the staff. One consequence of holding out such inducements is that it will enable the government to discover talent, and though it is not rewarded, it may be made use of in some future emergency.

This plan to be introduced gradually, say by beginning with the second lieutenants first.

S. B. HOLABIRD,
First Lieutenant First Infantry.

W.

WEST POINT, July 31, 1860.

SIR: I have received your two communications, dated, respectively, the 18th and 23d instant—the former asking, in behalf of the Commission instituted to inquire into the organization, system of discipline, and

course of instruction at the Military Academy, to state what modification or changes in the organization and course of instruction at the Academy are, in my opinion, desirable to secure to the Army officers best qualified to perform their various duties and to meet all their responsibilities; and the latter propounding three questions, viz:

"1. What modifications, if any, of the present mode of assigning cadets of the Academy to corps or arms would, in my opinion, be better adapted to the purpose of securing to each branch of the service the highest special qualifications, and to the Army the greatest general efficiency?"

"2. To what extent, if at all, would it be advisable, in my opinion, to require officers to serve in different corps or arms?"

"3. Do the graduates of the Academy, so far as I know or believe, generally pursue their professional studies after entering their respective corps; and can I suggest a method which would, in my opinion, further stimulate to useful emulation and professional improvement among the junior officers of the Army?"

My long absence from the Academy makes me diffident in the expression of any opinion concerning the course of instruction further than to say that such branches as require the aid of able teachers, and which cannot well be studied without such aid, should be thoroughly taught in the Academy. The ground-work should be thoroughly scientific. But in regard to the organization of the Academy, I do not feel the same hesitation.

The frequent drafts upon the line of the Army for its assistants, the want of homogeneity in the official character of its corps of instructors, and the consequent uncertainty as regards the public relations of its members, make a reorganization of the Academy, in my opinion, desirable. Indeed, the interests of the Army and the permanent welfare of the institution require it. Formerly the functions of the Academy were performed by the Corps of Engineers, of which the headquarters were at West Point. This was in accordance with the provisions of law. But, yielding to the exigencies of the public service, most of the officers of engineers were sent elsewhere, and their places supplied by details from the other arms of service. The character of the Academy, in this regard, is almost wholly changed. The Army feels the want of its detached officers; the frequent changes in the Academy, rendered unavoidable by the necessity of restoring at stated and short intervals those officers to their appropriate duties, impair its efficiency, and thus, to meet the demands of the works of public defense, the care of the troops has been abated and the instruction of their officers impaired. The Academy is a part of the military establishment of the country, and its connection with the Army should be made as intimate as possible. To remedy the evils to which I have adverted, I would suggest either that the institution be remodeled upon the plan of the staff corps of the Army, by giving it a separate military organization which would confer upon all its members permanence of connection, and, except the chaplain, the possession of local military rank; or by defining, by law, the exact number of its professors and assistants, including the adjutant and quartermaster, designating the title and rank of each, and adding to the Army a number of officers of like grades, as supernumeraries, to supply them. The first method would be liable to the objection that in time the institution might become superannuated by the age or premature decay of its professors, with no remedy but the extreme one of dismissal. The second, which I deem the preferable, would, with a proper administration of its affairs, keep the Academy in

a condition of high and perpetual efficiency, by returning to the active duties of the Army such as should not continue in the duties of instruction, and supplying their places from the line or staff, as the case may be. The chaplain should, in my opinion, be relieved from all his present duties except those which relate to the pulpit and visitation, and those duties transferred to an additional department, to be called the department of English studies. The reasons for this change are too obvious to require further remark.

In answer to the first question, I would advise that when a class graduates, its members be distributed among the different regiments of the Army, and made to serve with troops; that all vacancies in the staff corps be filled by competition from the line, and after a thorough examination of the competitors by a competent board, and that a certain length of continuous service with troops be one of the indispensable conditions which determine the choice. This would secure to the staff corps the best capacities and greatest cultivation in the Army. There should be an examination for each grade of advancement to the rank of captain.

To the second question, I answer that every officer should be made to serve, in succession, with troops of all arms of service.

To the third question, I would say I have no reason to believe that officers of the line, as a general thing, pursue their professional studies, after leaving the Academy, to any desirable extent, but if the plan suggested in my answer to the first question were adopted, they might be induced to do so.

Very respectfully, your obedient servant,

S. COOPER,
Adjutant General.

Lieut. J. C. IVES, *Topographical Engineers,*
Secretary of the Commission at West Point.

Y.

FORT MONROE, VIRGINIA,
July 28, 1860.

SIR: In reply to yours of the 18th, requesting me to state what modifications or changes in the organization and course of instruction at the Academy are, in my opinion, desirable, I have to state that I prefer the four years' course to that of five years; and also that I am of the opinion that the selection of the Superintendent should be made from the whole Army, and not, as now, exclusively from one corps.

I am, sir, very respectfully, your most obedient servant,

J. DIMICK,

Lieut. Colonel Second Artillery, and Brevet Colonel.

Lieutenant J. C. IVES,
Sec. Mil. Acad. Commission, West Point, New York.

Z.

BOSTON, MASSACHUSETTS,
July 28, 1860.

SIR: I feel much honored by the note addressed to me July 18th, and which reached me here a few days afterwards; but I have not had the opportunity to make myself familiar with the organization of the

Military Academy since 1843, and feel, therefore, that any suggestions would be out of place. I should have considered it a great boon to the cadet of 1825, to have had five years to study the then course of four years, as there was not time to digest the various knowledge acquired from day to day. All this may have since been changed, and I merely, therefore, write to acknowledge my sense of the honor done me by your Commission.

Very respectfully, yours,

A. D. BACHÉ.

Lieutenant J. C. IVES, *U. S. Top. Engineers,*
Secretary Commission under act of June 21, 1860.

A¹.

Questions submitted by the United States Military Academy Commission to the Professor of French.

1. What subjects are taught in your department? State briefly the amount of instruction given in each.

2. Reference being had to the objects for which the Military Academy is established, should the teaching in any of these branches be extended; and, if so, in which, and how far? Should it be curtailed in any way; and, if so, in which, and to what extent?

3. What method of instruction is pursued in your department, and are there any modifications which would improve it?

4. What practical instruction is given in your department? Should this be extended or curtailed?

5. How many hours' study should the cadet give daily, to be proficient in the course prescribed for your department; and to what extent would this be increased or curtailed by any modifications proposed by you?

6. How many hours daily is each cadet occupied in recitation and in the section room in your department?

7. Is the amount of study required in your department such as to overtax the student; regard being had to the demands made upon him by the other departments at the same time? What modifications would the changes proposed by you introduce?

8. Is there any indication of overwork, or of weariness of study, among the cadets in any of the departments, in the recitation room or examination hall?

9. Have you any modifications or changes to suggest, not embraced in your answers to the foregoing questions, respecting the course of instruction, that would, in your opinion, conduce to the better accomplishment of the objects of the establishment of the United States Military Academy?

Answers to questions submitted by the United States Military Academy Commission to the Professor of French.

Question 1. In the department of French, the requirements as expressed in article 5, course of instruction, paragraph 23, of Regulations for the United States Military Academy, are:

1. French grammar.
2. Reading and writing French.
3. Translating French into English and English into French.

The spirit of the above regulations, as understood by the undersigned, tending mainly to prepare the cadet for the accurate expounding and translating of any French text, the matter forming the basis of study throughout the three courses of instruction has been divided into four distinct heads, each exhibited in detail in the various programmes submitted successively to the Academic Board. These divisions are :

First. A tabular system, specially devised for the use of cadets, and intended to classify the primary elements of the language.

Second. A grammatical course of etymology and syntax, as applied to the particular rules of the French language.

Third. A course of translation from text books of gradual difficulty, consisting of selections from the writers of the age of Louis XIV down to those of the present day.

Fourth. The thorough study and acquirement of the verbs of the language.

Question 2. Having in view the result sought to be attained in pursuing the study of French at the Military Academy, the undersigned is of opinion that the present course of instruction is sufficiently extensive to enable the cadet to acquire the desired proficiency. He is also of opinion that any suppression from the successive courses of instruction now in operation could not fail to be manifestly detrimental.

Question 3. When the undersigned was appointed to the professorship, his first endeavor was to devise and perfect a course of instruction calculated to carry out, in the most effective manner, the spirit of the regulations. Feeling the necessity of a condensed course of initiatory instruction, he devised, in addition to the text book adopted as a grammar, an *elementary and practical tabular system*, having for its object the methodical classification of the defining words of the language, the important subject of the place and order of personal pronouns, direct and indirect, &c., together with a scheme of derivation for the ready use of the regular verbs, the difference between French and English prepositions, and a course of idioms; the whole so framed as to harmonize with the portion of the grammar rules and exercises studied simultaneously with the tables during the whole course of instruction. For a proper development of this plan of instruction, the following mode was adopted for the government of instructors, as most conducive to the advancement of the pupil :

MODE OF INSTRUCTION—TABULAR SYSTEM.

Each table, as successively studied, to be written out on the blackboard by the pupil, from memory, explained by him thoroughly in all its bearings, and illustrated likewise at the blackboard by practical examples appended to each table. The tables for successive recitations to be handed to the squad marchers of each section in sufficient numbers to enable each member of a section to record them in blank-books furnished for the purpose and subject to inspection. For purposes of recitation upon tables, the pupil will be sent to the blackboard with slips in the following form :

APPLICATION AT BLACKBOARD.

SLIP No. 1.

SUPPLYING WORDS IN ANSWER.

TABLE NO 1.

QUESTIONS.	ANSWERS.
Have you the master's book ?	I have not.
Did you give the horse to the man ?	I did not ; your father did.
Has he sent the sailors to the boats ?	He has not.
Have the generals seen the arsenals ?	They have.
Will the children have the gloves ?	They will not ; thy mother will.
Did you not give the jewels to the marshals ?	I did not.
Was the clerk at the bank ?	He was not.

HONORER.

BOARD FILLED UP BY PUPIL.

TABLE No. 1.

THE DEFINITE ARTICLE.					PRIMITIVE TENSES.		
	<i>M.</i>	<i>F.</i>	<i>Com.</i>	<i>Pl.</i>	Honor	er	Reg. verb.
The	le	la	l'	les	Honor	ant	1st conjug.
Of the	du	de la	de l'	des	Honor	é	
To the	au	à la	à l'	aux	J'honor	e	
					J'honor	ai	

QUESTIONS.	RÉPONSES.
Avez-vous le livre du maître ?	Je ne l'ai pas.
Avez-vous donné les chevaux à l'homme ?	Je ne les lui ai pas donnés.
A-t-il envoyé les matelots aux bateaux ?	Il ne les y a pas envoyés.
Les généraux ont-ils vu les arsenaux ?	Ils les ont vus.
Les enfants auront-ils les gants ?	Ils ne les auront pas ; ta mère les aura.
Le commis était-il à la banque ?	Il n'y était pas.

These slips he will translate, writing out the special table in full (as in the diagram above), translating the practical examples in accordance with the principles developed in the table, and explaining these principles when called upon to recite. The same method will be followed for each successive table.

TRANSLATION.

Text books. { Bérard's *Lecçons Françaises*.
 { Chapsal's *Modèles de Littérature*, (ancient and modern writers.)
 { Rowan's *Reader*, (difficult extracts from writers of the present time.)

In order to counteract the pernicious habit of guessing at the sense without an accurate analysis of the component parts of the French phrase, translations *strictly literal* are required during a portion of the first course of instruction. Experience having proved that a period of two months' daily recitations suffices to confirm the pupil in the habit of satisfying himself with respect to the signification of every word as placed, agreeably to the rules of French construction, after this period the instructor will require *free translations*, ascertaining, when deemed necessary for the elucidation of a difficulty, that the pupil understands thoroughly the literal construction and the grammatical relation of words in the French sentence, the text affording at every step abundant opportunities for the practical application of the tabular system, the particular grammatical rules in progress of acquirement, the conjugation of verbs of every class, together with the all-important subject of the *use of moods and tenses*, and the difficulties resulting from the constantly varying use of prepositions in the two languages.

The *translation lesson* will be conducted in the following manner :

1. The pupil, standing in the center of the room, reads in a clear tone a portion of the French text as an exercise in pronunciation.

2. He proceeds to translate literally or freely as the instructor may direct.

3. The book being closed, the instructor examines the pupil orally, giving him, in the first place, the French text *viva voce*, requiring a correct English translation ; and, in the second place, an English version of the text, requiring the French translation ; this latter exercise serving as a test for the various rules of French instruction already acquired, and affording an opportunity for new explanations.

GRAMMAR; RULES AND EXERCISES; TEXT-BOOK; LEVIZAC'S GRAMMAR.

The portion of exercises given out as a daily lesson will be recited upon the floor, the instructor giving an example in English, and requiring the correct French rendering, in accordance with the particular rule intended to be illustrated. Time admitting during recitation a written translation at the blackboard will be required.

VERBS; TEXT-BOOK; BOLMAR'S VERB-BOOK.

A thorough knowledge of the verbs of a language being an object of paramount importance, a *verb board* has been introduced, and so constructed as to enable the pupil to write out in a tabular form each verb as successively learned. The annexed diagrams, it is deemed, will be sufficiently explanatory without further comment. After a few recitations upon table 11 (derivation of verbs) the latter are conjugated with reference to their derivation.

tion having for its object to impart a competent working knowledge of the written language, thus giving the pupil a grammatical basis sufficiently solid to enable him, by after efforts, either to acquire with facility the details of the spoken language by the study of words and their combinations as supplied from vocabularies and dictionaries, or to perfect himself by actual practice where the language is spoken. He adopted a mean term between the old academic mode of teaching and the entirely practical one, without grammatical rules, as developed in the numerous oral methods of the day. By an examination of the tabular system as devised by the undersigned, it will be observed that few rules are given; nevertheless, the explanations embodying the principles applicable to each successive table being imparted by the instructor, experience has proved that they soon become engraven on the mind of the pupil. It will be further observed that the application of the tables in sets of phrases is of a nature entirely practical.

When entering upon the second course of instruction, the pupil having been made familiar, in the tabular system, with the use of the objective pronouns, direct and indirect, and the method of supplying words in the answer, for the purpose of rendering the course as practical as possible, the grammar phrases illustrating rules when admitting the inversion, are presented in the form of questions and answers. For example, in the exemplification of a tense of the indicative, forming part of a recitation, one of the sentences studied in the grammar presents itself as follows:

He does not propose salutary advise to his friend.
 proposer, nn. avis, m.

The conjugation of the verb and the basis of the phrase being acquired, the latter is presented in the following form for application at the board:

Question. Does he not propose salutary advise to his friend?

Answer. He does not; he never does; he never will.

The same method for every lesson assigned is continued throughout the remainder of the course.

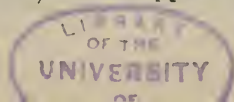
Question 5. The undersigned is of opinion that a pupil of fair abilities, without any previous knowledge of the language, will require two hours' study at quarters for the accurate preparation of each recitation in French.

Question 6. The time allotted to a recitation in French is one hour daily during the fourth-class year, and one hour, alternating with Spanish, during one half of the third-class year. In the section room the student's time is divided between construction at the board and exercises on the floor. It would be very difficult to arrive at an average of the time allotted to each individual student during a recitation. The rule being that the attention of a section be concentrated upon the matter forming the subject of a recitation, such individual recitation is supposed to profit the whole.

Question 7. The programme for the course of French having been made out in accordance with article 5, paragraph 43, of Regulations for the Military Academy, proportioning each branch of study to the capacity of different sections, the undersigned has reason to believe that students are not overtaxed in his department.

Question 8. Cadets are not backward in complaining of overwork. Of late years no complaints of such nature have been made, either directly or indirectly, to the undersigned or to the instructors in his department; nor has he observed any marked evidence of weariness of study either in the section room or in the examination hall.

Question 9. Confining himself to his specialty, the undersigned takes the liberty of stating that when he first entered upon his duties at the Military Academy, the whole course of studies was embraced within the term of four years, the time allotted to the study of French being two years, with daily recitations during the first or fourth class year, and alternation with other studies during the second or third class year. The cadet was thus made to commence the study of a foreign language in most cases with a very imperfect knowledge of either general grammar or the particular grammar of his own tongue, a circumstance continually nullifying the benefits of a comparative method, and necessarily offering great impediment as regards rapid advancement. At a subsequent period, the time allotted to French was curtailed six months, and it was so arranged that the cadet entered upon the study after having gone through his course of English grammar. The benefit of the change soon became apparent, and the undersigned does not hesitate to give, as his opinion, that, notwithstanding the curtailment, the progress of pupils has since been greatly superior to that made under the old system. He is emboldened to make these remarks in support of the opinion that the benefits of the comparative method depending, in a great measure, on a sound grammatical knowledge of the vernacular, this ought to be made the ground-work of a foreign idiom. He would, therefore, advocate warmly that the greatest development be given to the study of grammar, both as a science and an art, during the cadet's initiatory year, and previous to entering upon the study of a foreign language. With this indispensable preparation, he undertakes the study of the foreign tongue after acquiring a theoretical knowledge of his own, and hence the distinction between teaching English grammar to an English pupil and French grammar to the same will be easily understood. In the one case, the student must be taught to parse his own language with accuracy both etymologically and syntactically. In the other case, the teacher of a foreign language, dealing with pupils thus prepared, should have nothing to do with such teaching, which evidently would occasion a waste of precious time without any bearing upon the end sought to be attained. Grammatical terms and the relation that words bear to each other being understood by the pupil, the instructor of the foreign idiom pursues his task with ease and freedom, and finds no difficulty in carrying out the main purpose of a comparative method, having, for its aim, an initiation into the difference of construction existing between the language of the pupil and the language to be acquired. The subject of instructors in the department of French at the Military Academy is one concerning which the undersigned takes the present opportunity of presenting his views, which, when not fully explained, have frequently clashed with opinions generally received. Experience has proved to him that classes have been thoroughly taught by officers of the Army acting as assistant professors under his supervision, and these classes have been taught, he thinks, with more accuracy than they could have been by the majority of instructors, natives of France. This assertion may be upheld by the fact that the officer entering upon this special duty at the Military Academy, having himself passed through his course of French with distinction, knows exactly what to teach and how to teach it. He has, in all cases, a good basis, both as regards pronunciation and knowledge of the construction of the language. He forthwith applies himself diligently to the duties of his special branch, and speedily becomes efficient. In cases of doubt, of frequent occurrence in language even to scholars deeply versed, he can appeal to the



head of the department; and, more than all, his familiarity with the vernacular as the vehicle for conveying his explanations and expounding texts in the comparative method of teaching, gives him an advantage rarely possessed by natives of France. The officer at once commands respect, he understands the American character, and has an intimate acquaintance with all duties and peculiarities connected with cadetship. On the other hand, unless rare circumstances either of parentage or local education have afforded him the advantages of fluency in and perfect pronunciation of the language of the pupil, the native of France must necessarily labor under great disadvantages in his endeavors to impart instruction; thus it is that, with the majority of such instructors, it is of constant occurrence that sensible remarks and their force, although understood, are nullified by the amusement or impatience excited by awkward phraseology and bad pronunciation. The institution of a chair of French literature and belles-lettres would require a degree of proficiency in pupils sufficient to enable them to understand lectures delivered in the French language. In such a case, it would be advisable, if not indispensable, that the position should be filled by a highly competent native of France; but, with the present requirements in French at the Military Academy, when early instruction must necessarily be elementary, and the successive portions of the course taught by a comparative method, the undersigned is of opinion, as far as the best interests of his department are concerned, that officers of the Army will always prove the most efficient instructors.

H. R. AGNEL,

Professor of French, United States Military Academy.

B¹.

WEST POINT, N. Y., July 31, 1860.

SIR: In reply to the question submitted by the United States Military Academy Commission, I have the honor to suggest that instruction in my department be extended to include—

1. A course of military gymnastic exercises.
2. Practice in rowing boats.

The gymnastic exercises can be practiced during the winter months, while drills are suspended. At this time vigorous exercise is much required by the cadets to keep them in good health.

The object of these exercises will be to develop the *physique* of the cadet, to aid him in acquiring a skillful use of military weapons, to give him self-reliance and confidence in personal encounters, to learn him to estimate correctly the amount of exertion men are capable of enduring, and, in fine, to fit him for the military service so that he will be able, after entering the Army, not only to undergo with ease whatever hardships his profession may impose upon him, but also to encounter difficulties with satisfaction.

To accomplish this object, a suitable hall, complete in its appointments, must be provided.

One great advantage that will result from founding such an establishment here as will reflect credit upon the Academy and the country will be found in the encouragement that will be given by the graduates who will have experienced its benefits to the practice of gymnastic exercises at our military posts. These exercises will not only afford an amusement to our soldiers that is much wanted, but they will constitute a means, than

which a better cannot be devised, for promoting a feeling of efficiency and a spirit of enterprise among them, and for keeping them in constant training for sudden and severe service.

As the Hudson River offers peculiar advantages for the cadets to practice rowing, and at the same time to indulge in an agreeable relaxation from military duty, it seems unfortunate the opportunity should be neglected. Were the first and second classes each in possession of two boats, they might, during the last two encampments, and on Saturday afternoons of the academic term, acquire a familiarity in the management of boats and a fearlessness on water that would surely add to their efficiency in their profession.

Instruction in swimming has been commenced this summer with the most satisfactory results. A temporary dock has been arranged at little expense, which answers the purpose. There should, however, be a larger and more complete establishment put up at Gu's Point, which is further removed from public observation and intrusion than the present bathing place.

Instruction in my department extends through the first two years of the term. As soon as the fifth class has been well established in the school of the soldier, about the 15th of July, they receive instruction daily for two weeks in target practice. From the 1st of August till December 1, they receive five lessons every two weeks in the bayonet exercise—forty lessons in all. During the month of May following, they again practice with the bayonet, and at the June examination they exhibit their proficiency before the Board of Visitors.

From December 1 till 1st of May, and from September 1 until 1st January of the second year, they receive three lessons each week in the small-sword exercise—ninety-eight lessons in all. And from January 1 till June of the second year, they receive three lessons each week in the use of the saber, or cut-and-thrust sword—sixty lessons in all, which completes their instruction in my department, except in target practice. In this exercise all classes receive instruction for a few weeks during the encampment.

It is desirable to extend instruction to the first class in the bayonet and saber exercises, so that its members may join their regiments perfect in the use of those weapons. It is not advisable to curtail in any respect the instruction in the use of arms.

To increase the efficiency in my department, three assistants to the sword-master are immediately necessary. The classes being limited to two hours' instruction daily, they are necessarily divided into large sections—too large for one man to pretend to instruct properly. Assistants are therefore absolutely necessary, and I recommend they be young and active enlisted men who have shown an aptitude for athletic sports, selected from among the soldiers at this or neighboring garrisons. After the first year, one of these men might be relieved at the expiration of each six months, and sent to some regiment a finished sword-master, his place at the Academy to be supplied. These men should receive, while at the Academy, the pay of sergeants.

By this means the cadets, instead of fencing with each other exclusively, would receive much individual instruction, and the Army would gain yearly two proficient in arms, who would become *maître d'armes* of regiments.

An ordnance artificer is very much needed to attend promptly to the repairs of the department. He should be under the control of the ordnance officer of the post, but his special duty should be to keep in

repair the muskets and fencing masks, and mount foils and sabers, which will keep him actively employed several hours every day.

I recommend that cadets distinguished in the use of arms wear some appropriate embellishment on their caps or coats, and that prizes of considerable value be awarded to the five who exhibit most skill in the use of weapons at the final examination.

It is supposed that it will be agreeable to my successor in charge of the department to be put upon an equality, as regards pay, with the first assistant instructors in other departments, and I therefore beg leave to recommend it.

I am, sir, very respectfully, your obedient servant,

JOHN C. KELTON,

First Lieut. Sixth Infantry, instructor in the use of small arms.

Lieut. J. C. IVES, *Topographical Engineers,*

Secretary U. S. Military Academy Commission.

C¹.

UNITED STATES MILITARY ACADEMY,

July 31, 1860.

SIR: In accordance with the request contained in your note of July 18, I have the honor to submit the following replies to the questions proposed by the Commission, instituted by the act of Congress of June 21, 1860:

I. The subjects taught in my department are: Algebra; geometry; trigonometry; mensuration; descriptive geometry, with its applications to spherical projections; shades, shadows, and perspective; analytical geometry; differential and integral calculus; and surveying.

1. The course of ALGEBRA comprehends all of the fundamental operations—involution and evolution; transformation and reduction of fractions and radical quantities; theory and solution of equations, including those of the higher degrees; ratios and proportions; summation of series; nature, computation, and use of logarithms.

This course is studied by the *fifth class*, and occupies the time from the 1st of September to the 1st of January.

The first section of the class is, in general, required to study all contained in the text book now in use—Davies' Bourdon's Algebra.

The lowest section omits many of the more difficult discussions and examples, the amount studied being less than two-thirds of that required of the first section.

The intermediate sections, in this, as in other subjects, omit more or less, according to their capacity and progress, in accordance with paragraph forty-three of Academic Regulations.

2. The course of GEOMETRY comprehends plane geometry, geometry of volumes, and spherical geometry—nine books, as in the text book, Davies' Legendre.

The entire course is required of every section of the *fifth class*, commencing after the close of the January examination, about the 10th of January.

The first section finishes it about the 1st of March; the lowest about the 25th of the same month; the other sections at intermediate dates.

3. The course of TRIGONOMETRY comprehends the deduction and analytical investigation of all the important trigonometrical formulas;

the nature, construction, and use of the various trigonometrical tables; and the solution of all cases in plane and spherical triangles.

The entire course is required of every section of the *fifth class*.

The first section commences it immediately after finishing geometry, and completes it about the 25th of March.

The lowest section commences after finishing geometry, and completes it about the 25th of April.

4. The course of MENSURATION comprehends the mensuration of the various plane geometrical figures and volumes; and, with the exception of two or three problems omitted by the lower sections, is required of the entire *fifth class*. It is studied immediately after trigonometry, and is acquired in two or three lessons.

5. The course of DESCRIPTIVE GEOMETRY comprehends the representation of lines and surfaces on planes; the classification and mode of generation of lines and surfaces; the construction of their tangent lines and planes; the intersection and development of surfaces; the construction of spherical triangles, of spherical projections, of the shades and shadows of various objects, and their perspectives.

Each section of the *fifth class* commences the course immediately after finishing mensuration, and studies as much as can be well acquired by the 8th or 10th of May, when the class reviews the entire course previously studied, with the exception of algebra, which is usually reviewed by the first and second sections only, preparatory to the June examination.

The first section of the *fourth class* resumes this subject about the 5th of November, after completing the course of analytical geometry (see below); the lowest about the 25th of October; and both pursue it until about the 5th of December, when the whole course of the term is reviewed, preparatory to the January examination. From the close of the examination in January—about the 15th—until the 5th of February, the whole class is occupied, three hours each morning, in the mathematical drawing academy, in drawing problems in shades, shadows, and perspective.

In this course, as in the algebra, many of the more difficult problems are omitted by the lowest and other sections, the lowest section studying not much more than half of that required of the first.

6. The course of ANALYTICAL GEOMETRY comprehends the construction of algebraic equations; solution of determinate problems; determination and discussion of the equations of the right line, plane, and conic sections; discussions of the general equation of the second degree, involving two or three variables; determination of loci, &c.

This course is commenced by the *fourth class* on the 1st of September, and finished by the first section about the 5th of November, and by the lowest about the 25th of October.

The first section studies all of the text (Church's Analytical Geometry), with the exception of ten or twelve pages; the lowest not much more than one-half.

7. The course of DIFFERENTIAL AND INTEGRAL CALCULUS comprehends the elementary principles and rules, with their application to maxima and minima; the drawing of tangents; curvation of curves, their rectification, quadratures, cubatures; construction and discussion of the properties of curves and surfaces.

The *fourth class* commences this course about the 5th of February, and completes it about the 15th of April; the first section learning most of the text (Church's Differential and Integral Calculus); the lowest not more than one-half.

8. The course of SURVEYING comprehends the principles and practice

of common land surveying; different methods of plotting and calculating the surveys; trigonometrical surveying; measurement of heights and distances; use of instruments in plotting, surveying, &c.

The entire course is required as in the text (Davies' Surveying), with the exception of a small portion relating to geodesic surveying, omitted for one or two of the lower sections.

The *fourth class* commences this course immediately after completing the differential and integral calculus, and finishes it about the 7th of May, when the mathematical course for the year is reviewed, preparatory to the June examination.

II. The detailed programme of the course of studies in each of the branches of the mathematical course has been arranged, after long experience, and with various modifications from time to time, with especial regard to the objects for which the Military Academy is established. In my opinion, it is not necessary to extend the teaching in any direction; neither ought there to be any curtailment.

I consider the course of mathematics as now taught to all who pass their final examination sufficient to enable the cadet to acquire a thorough knowledge of all the courses which follow it, and not more than sufficient to enable him to study with advantage the courses of natural and experimental philosophy, engineering, and ordnance and gunnery. Moreover, I regard the mental training of the pupil as one of the great objects of the study of mathematics—a training particularly required by the officer of every corps of the Army, and to which many of them owe their distinguished success; and I believe that the scientific reputation of the Academy—all that distinguishes it from other institutions of learning—depends, in a great degree, upon the thoroughness and extent to which the mathematics and its applications to other sciences are taught, and that to diminish them would seriously affect this reputation and the success of the institution.

III. For the purposes of instruction and recitation in the mathematical department, each class is divided into convenient sections of from ten to fifteen members each; two of these sections are instructed daily by one of the assistant professors under the general supervision of the professor. Every member of each section is, if possible, required daily to explain, at the blackboard or wall slate, one or more propositions of the lesson given out on the previous day, and is thoroughly examined by questions on a portion or all of it. Points not well understood are carefully explained by the instructor or professor. Each pupil is also expected to make known all difficulties with which he may meet, to the end that they may be at once removed, and a thorough understanding of each lesson in order thus obtained. For the purpose of testing this understanding, various practical examples illustrating the principles of the course are required to be worked by the pupil at the blackboard or slate.

The head of the department is also required to pass the hours of recitation in visiting two or more of the sections, and is constantly occupied in explanations of the principles of the course and of their applications, either to the entire section, by a familiar conversational lecture, or in particular explanations of the more difficult points, to individuals. A uniformity of method of instruction is thus secured to all the sections, while the relative merits of each pupil are thus in detail made known to the professor, and transfers from section to section of those making the most or least progress can be made without inconvenience or injustice.

In descriptive geometry most of the elementary problems are illus-

trated and explained by the professor from models in the section room, and also from a set of models in the mathematical room.

In surveying, the pupils, in addition to the explanations of the construction and use of the instruments, are required afterwards to use practically on the field.

I know of no modifications in the method of instruction calculated to improve it. The method in the branches of descriptive geometry and surveying may be made more effective by the further addition of models and instruments.

IV. The only practical instruction given in my department, except the exercises in the practical solution of examples and problems before referred to, is the instruction in the drawing of problems in shades, shadows, and perspective, and the instruction on the field in surveying.

In this latter branch each section of the fourth class is sent into the field in charge of its proper instructor during the hours of morning recitation, in the months of April and May, whenever the time can be spared and the weather will permit. As much time is allowed as will enable every attentive pupil to become familiar with the use of each of the common surveying instruments, though it is impossible in this limited time to make any one a practical surveyor.

It is desirable that more time should be given to this practice, as well as to the instruction in drawing.

V. From *three and a half to four hours* should be given daily by the cadet to render him *thoroughly* proficient in the prescribed lessons of the mathematical course.

No modifications are proposed which would affect this time.

VI. Each cadet of the fourth and fifth classes is occupied *an hour and a half* daily in the mathematical recitation or section room, or in the field, except during the practical instruction in drawing, when three hours in the drawing academy are required.

VII. I do not consider the amount of study required in the *fifth* class such as to overtax the pupil.

I was satisfied at the time of the adoption of the programme for a five years' course that more was required of the *fourth* class than its members could learn with that thoroughness which is absolutely necessary to make accomplished and well-trained scholars.

I am confirmed, by experience, in this opinion, and although the course of this class has been since somewhat modified by the omission of a portion of the course of English, I still think that more is required than it can accomplish with advantage. The difficulty is not so much in the amount of time requisite for the study and recitation of the lessons as in the mental confusion which must arise from the multiplicity of subjects.

No student should be required to prepare himself, by previous study, for recitation in more than two distinct subjects a day, particularly where one of them is scientific; and each lesson, as far as possible, should be recited before it is necessary to begin the study of the other.

VIII. In my own department I seldom see any indications of overwork or weariness of study. I see much more of an inclination to get along with as little study as possible. In fact my frequent inquiries of the members of the two classes under my charge have shown me that the instances are many in which the cadet does not industriously occupy all the time which should be devoted to the study of his lessons, and which I think can and will be devoted by an ambitious student without overwork or weariness.

I have little opportunity of observing in other departments, except at examinations, where I see no such indication.

IX. In my opinion the programme of the present course of studies is imperfect, and has failed to answer the purposes contemplated at the time of its adoption. I think we have fallen into an error in attempting to combine too much of a thorough literary with a thorough scientific and military course of instruction. By the introduction of a multiplicity of subjects, without a corresponding increase of time, we have endangered the accomplishment of the latter course, to which the Military Academy owes its reputation and success, and from which its graduates have derived the systematic and thoughtful habits which have made them distinguished as effective officers or citizens.

The interests of the Academy require that the programme should be carefully revised, and so modified as to make it more in accordance with what the experience of the last six years has clearly indicated.

One of the greatest obstacles to a successful prosecution of the course of studies at the Academy is the want of previous proper study on the part of many of the cadets of the simple elementary branches prescribed by law as requisite for their admission. I do not think it proper to increase the number of these branches, instruction in which is now within the reach of every American youth (unless, perhaps, that of geography might be included), but I do not think it essential that a more thorough knowledge should be required.

A hurried, and by no means strict, examination here results annually in the rejection of many of the candidates for admission, who have come from a long distance and been subjected to great expense. Could several candidates to fill each vacancy be carefully examined in the simple branches required, in the district or State from which they are to be appointed, and the best one selected, the Academy would receive a far better material and be able to give better results.

Very respectfully,

A. E. CHURCH,
Professor of Mathematics, U. S. Military Academy.

Lieut. J. C. IVES,
Secretary of Commission, &c.

D^l.

WASHINGTON, July 28, 1860.

SIR: I have the honor to acknowledge the receipt of your communication of July 18, addressed by order of the Commission, requesting me "to state what modifications or changes in the organization and course of instruction in the Academy are, in my opinion, desirable to secure to the Army officers best qualified to perform their various duties, and to meet all their responsibilities."

I was a member of the board convened last winter to revise the course of studies under the five-year term, and the subject, so far as relates to the course of instruction, received my earnest attention. While I never doubted that five years was, as a general rule, too long to stay at the Military Academy with profit to the student, I, nevertheless, was forced to the conclusion that with the present low standard of admission to the Academy, five years was necessary to enable him to attain proficiency in all the studies required to qualify him for duty in any and all of the

different corps of the Army. The natural expansion of the sciences, particularly chemistry and geology, and mathematics applied to mechanics, and also the addition of Spanish to the course, made the addition of another year indispensable in the absence of legislation, Congress having fixed absolutely by law the present standard of admission to the Academy.

Assuming what I hope may be assumed as fixed, that the standard acquirement of the graduate is not to be lowered, but rather to be raised, there will be but two propositions to consider in any plan for a reconstruction of the course of studies. The first is to raise the standard of admission so that the cadet on entering shall possess all the information taught in the first one or two years, reducing his term at the Academy to four or three years. The second is, to keep the standard of admission as at present, and readjust the course of instruction so as to eliminate several incongruities which are now admitted to exist.

I am aware of the objections urged against raising the standard of admission. I nevertheless believe, in spite of these objections, which I admit to be grave, it would promote the interests of the Academy, and add to the personal respectability and efficiency of the officers, if the standard of admission was raised so as to require the candidate to know all that is now taught in the first and second years. The cadet would then be required to stay at the Academy but three years, and the cost to the government of educating him would be reduced. Experience has shown that a longer time than three years devoted to a joint mental and physical effort, combined with the rigorous exactions of military service, is too much for youth, and destroys that elasticity and buoyancy of character, and love for the profession, which should characterize the military man. In well organized military establishments the smallest deviation from the line of duty is inadmissible. This by itself, although at first oppressive, becomes in the trained soldier a habit of order and regularity, which in the end is a source of comfort and happiness, and attaches him to his vocation even in time of peace. Not so with the youth who at the same time is required to exert every faculty of the mind to compass abstruse and difficult problems in mathematics and philosophy. The two together form a greater pressure than is proper for the development of the highest military qualifications. To take examples from our own military establishment would be invidious; but we may turn to the statistics of the French military institutions to demonstrate the fact. The Polytechnic School of Paris may be taken to illustrate the scientific, and the School of St. Cyr the military element of the West Point Academy, which has attempted, and I think with some success, to unite the good qualities of both. Of the number who graduate at the Polytechnic School, but few choose the Army as a profession; most of them prefer the civil branches of service. As a general rule, those only go into the army or navy whose academic standing does not give them the right of choice; those who do go are regarded as abstractionists, and a general from that school is a very rare case. On the contrary, the graduates of the school at St. Cyr, where the standard of admission is high, and the course almost exclusively directed to the application of the sciences to military affairs, have usually manifested attachment to the profession of arms, and many have become generals, and the very best soldiers of the French Army. It is true that the graduates of St. Cyr have not, when they leave there, the choice of entering the civil service, as at the Polytechnic School; but a limited number have the opportunity of going to the special schools of instruction, as the Staff School in Paris, the Artillery School at Metz,

and the Cavalry School at Sanmur; but, if I have been correctly informed, most of the pupils of St. Cyr, who have attained the rank of generals, have gone directly from St. Cyr into the army without having attended the special schools. The academic course at St. Cyr is, I believe, two years; and, if I mistake not, the standard of qualification for admission embraces—tactics excepted—all that is taught the first two or three years at West Point, with the addition of Latin and other subjects.

If, however, this plan is not at present adopted, owing to the unequal condition of education in different parts of the country, I should adhere to the five-year term, and adopt some such modified course of instruction as that prepared by a board of officers convened at West Point January 25, 1870. That programme, as far as completed, is in the hands of the present able Superintendent of the Academy, who, I have no doubt, will take great pleasure in laying it before the Commission. It possesses the merit of making no radical changes, and is, I believe, acceptable to the professors. That plan relates only to the course of instruction, and does not touch the subject of discipline, except so far as it provides that the first class shall be exempt from the duty of private soldiers, and shall be required to do the duty of officers.

In regard to the subject of demerit, I think that no practical advantage results from introducing conduct into class standing. It gives excuses, perhaps unjust, for complaints against the fairness with which the merit roll has been adjusted. It also seems to me not altogether right that a trifling dereliction of youth should follow him through life. Military punishments, particularly with youths, should be prompt. Offenses should, however, be noted, and when a certain number of demerits is exceeded, the delinquent should, as now, be dismissed. Although these offenses when taken separately may be of a trifling nature, yet in their accumulated form they exhibit a want of punctuality in the cadet which proves him unfit for the military service.

Most of the incongruities in the course of instruction were introduced against the judgment of the Academic Board, and have resulted from recommendations of other boards and of individuals who, looking at some particular subject of instruction with vision, perhaps, practiced and refined in that subject, but deficient in others which form the basis of military education, have lost sight of the fundamental purpose of the Academy, which originally aimed solely at military qualifications as the object of the course of instruction.

Therefore a great object would be gained if the course of instruction was fixed by competent persons in all its details of subject, time, and mode of instruction, and a law enacted making it impossible to change the programme, except by the intervention of a board, which should be permanent in its character, and composed of persons of the highest military and scientific reputation.

The subject of organization is a very delicate one. If that good rule requiring a change of station every four years in the disbursing corps of the Army is to be adhered to, it is quite evident that the present usage of restricting the Superintendency of the Academy to one particular corps, confines the field of selection to very narrow limits, and will in the end compel the appointing power to look amongst a junior class of officers for Superintendent, who, whatever may be their merits as mathematicians, can have no adequate experience in the government of men, and but little knowledge of the Army. It will, also, practically exclude from the participation in the government of the Academy every field officer of the line of the Army.

The tendency at the Military Academy has been at times to lose sight of the purposes of its foundation; to impair its military character, and assimilate it to our universities of learning, where all power is vested in the hands of an Academic Board. This tendency, so natural to men who cultivate science or literature exclusively, should be firmly resisted; for, if the Academy ceases to be essentially military, it should cease to exist.

To keep up the military character of the Academy there must not only be a good system, but men identified with the history of the Army in the field must administer it, which can only be secured by excepting from the operation of the four-year rule the Superintendency of the Academy, or by throwing it open to the whole Army.

Very respectfully, your obedient servant,

W. H. EMORY,

Major First Cavalry, Bvt. Lieut. Colonel, U. S. A.

Lieutenant IVES,

Secretary Military Academy Commission.

E¹.

WASHINGTON, July 30, 1860.

SIR: In reply to your communication of the 23d July, addressed by order of the Commission, I have to state my opinion on the three propositions submitted, and in the order of their presentation.

1. Information should be furnished in June of each year from the headquarters of the Army, showing the vacancies or wants in each corps and regiment of the Army. The graduates should then be allowed to select, and the right of choice should be on the order in which they are arranged on their final class roll.

2. Every graduate, of whatever corps or arm, should be required to serve two years with troops at the frontier posts as brevet lieutenants.

3. At the expiration of that service the officers named for each corps or regiment should repair to the headquarters of the corps or regiment, and there undergo an examination for his special qualifications, and also of his personal habits, and if found qualified he should be commissioned. I consider it important that the examiners should be officers detailed by the chief of the corps or regiment to which the officer is assigned.

Officers intended for the general staff—that is, the Adjutant General's and Quartermaster's department, should be required to serve two years in each of the three arms, cavalry, artillery, and infantry, then undergo examination, not only for proficiency and good conduct, but for competency in organization and administration of armies.

Very respectfully, your obedient servant,

W. H. EMORY,

Major First Cavalry, Bvt. Lieut. Colonel.

Lieutenant IVES,

Secretary U. S. Military Academy Commission.

F¹.

NEW YORK FREE ACADEMY,

August 2, 1860.

DEAR SIR: In answer to your letter of the 13th ult., asking my opinion as to certain changes and modifications necessary to be made in the

course of study and discipline at the Military Academy, I have the honor to reply that, after examining with very considerable care the programme of the existing course as contained in the official register, I have come to the conclusion that the changes which I would advise or recommend are very few, and those the following, viz:

In the fifth class, I would suggest the propriety of introducing the study of the Latin language, which would supersede the necessity of several of the studies enumerated in the English department of that year. This would not be the whole value of this study; it would be advantageous to all the subsequent studies of that department contained in the several following years. Besides, the study of the French and Spanish languages would be rendered more thorough, complete, and far more intelligible by one year's continual study of the Latin language. It may be said, perhaps, with truth, that quite a limited knowledge of the Latin could only be acquired in one year, yet the knowledge thus acquired would be greater and more available than prosecuting studies in relation to general grammar in any other manner. Furthermore, the synonyms of our language are awkwardly comprehended, if at all, without a knowledge of the Latin.

I think that the cadets need more linguistic culture, especially in a philosophical point of view; this they would receive in a measure by studying the subject I recommend.

In the second class, I would suggest the propriety of substituting for Tennemann's History of Philosophy the study of philosophy itself. Intellectual philosophy is a most profound and important subject of education; none can be complete without it. It seems to me very essential that the study of philosophy ought to precede the study of its history. In fact, I do not see how its history can be comprehended without a knowledge of the subject itself.

In relation to any changes as to the discipline now existing at West Point, as prescribed in the regulations for the government of the Military Academy, I see no cause for any improvement; or rather, perhaps, I ought to say, that I am not sufficiently well acquainted with the actual system of discipline now in operation at the institution to suggest any improvement.

The matter of discipline at the Military Academy must, from the nature of the case itself, be always attended with great difficulty. No changes, therefore, however wise or judicious, can remedy or obviate entirely the inconveniences to those subject to a high state of discipline.

I am decidedly of the opinion that the course of study at the Academy ought to be of five years' duration; less time than this will not allow the entire completion of the subjects of study desirable in finished military education.

I have the honor to be, very respectfully, your obedient servant,
HORACE WEBSTER.

J. C. IVES, Esq., *First Lieut. Top. Eng.,*
Sec. to the Commission in session at West Point.

G¹.

SIR: I have the honor to submit the following, in reply to the communication which you addressed to me from the Military Academy Commission:

Question 1. "Reference being had to the objects for which the United States Military Academy is established, should the instruction in artillery tactics be extended; and, if so, in what respect, and how far?"

It is my opinion that the time devoted to the study of artillery should be doubled. At present, for the acquirement of the course in artillery tactics, field and heavy, but six recitations, of one and one half hour each, are allowed, with three in addition for review; making, in all, nine recitations. I find that this division of the course makes the lessons too long, and, involving the necessity of omitting important portions, it prevents the attainment of that proficiency in details which is most desirable. I think that twelve lessons, with six in addition for review, are absolutely necessary to a proper knowledge of the course; making eighteen lessons in all.

Question 2. "What method of instruction is pursued in your department, and are there any modifications which would improve it?"

Answer. Theoretical instruction in field and heavy artillery tactics is now given to the second class. Practical instruction in the maneuvers of the different arms, field and heavy, and in the mechanical maneuvers, is given to the whole corps one hour each day, from the 1st of April until the 15th of May, and during the entire encampment; the first class acting as officers and non-commissioned officers. I would recommend that this arrangement remain unchanged.

I am convinced of the necessity of having a regularly enlisted set of drivers for the teams in the field battery, to be under the control of the senior assistant in artillery.

The importance of having skillful and well instructed men to take care of the teams and harness of a battery, is too apparent to need demonstration. Under the present system, these duties are badly performed by dragoons, enlisted without reference to their capabilities for making efficient drivers. I find that a very good dragoon may make a very unsafe driver. His team and harness not being under his own immediate care, he takes no pride in their good appearance or performance.

With thirty good drivers under his own immediate control, enlisted with particular reference to this specialty, the senior assistant in artillery could have his drivers well drilled; each man would have the entire control of and become identified with his team, and would take a pride in its appearance. In this way, there might result an accuracy, rapidity, and safety of maneuver difficult to attain under the present arrangement.

I am of the opinion, under the present programme of studies in the tactical department, that there is a necessity for two assistants in the artillery portion. The senior assistant in artillery being now required to teach a section in strategy, grand tactics, and army organization, and to give lectures on the subject of strategy to the whole class, his time will be too much occupied with the various details of his department to enable him to give as much time to the subject of strategy as its importance demands. With an assistant to relieve him of some of his duties, he would have it in his power to make the strategical portion of the course even more interesting and useful than it now is. I have had but one year's experience in this department, and make these suggestions with some hesitation. I am convinced, however, that if they should be adopted, my successor will be enabled to carry this in-

teresting and important department of military education to a much higher state of efficiency than exists at present.

Most respectfully submitted.

R. SAXTON,

First Lieut. Fourth Artillery, Assistant Instructor.

First Lieut. J. C. IVES,

Secretary U. S. Military Academy Commission.

H¹.

NEW YORK, August 6, 1860.

SIR: Owing to absence from the city, yours of the 18th ultimo has but recently been received, which is my apology for not having given it an earlier reply.

I fear that no suggestion of mine will be of any service to the Commission in whose behalf your letter was written. My line of life has been so long and so widely separated from the subject-matter of their investigation, that any opinions I may entertain must be of little value. Besides, I am not informed of the precise objects of inquiry contemplated by the act of Congress of June 21, 1860.

The importance, however, of a more complete course of study at the Military Academy has often presented itself to my mind as a thing highly desirable, if not indispensably necessary. A knowledge of the Spanish language, in particular, by the officers of our Army becomes almost a necessity, considering our relations, present and prospective, with persons speaking that language along our frontier. A more thorough study of the English language, as well as of some branches of the natural sciences and natural history, than has heretofore been found practicable, appears to me highly desirable.

The course of study at present pursued is quite sufficient for the time allotted to it. I deem it, therefore, impracticable to increase it by superadding the branches above suggested without increasing the period of study.

Nor do I know which of the studies heretofore pursued I should be willing to see omitted in order to make room for others, even although I might think them of superior importance.

To raise the standard of education requisite at the time of admission would be a means of overcoming the difficulty, but this would be in effect to exclude from the benefits of the institution many who would otherwise rank among the most useful and meritorious officers.

The only remaining course to be pursued is to add another year to the period of study. To this there certainly are valid objections, but to my mind they seem less than to either of the other methods suggested. I should certainly be in favor of such a measure rather than continue to omit some of the studies not now included in the academic course.

On this subject I will venture to make one single suggestion, which is, to make the course five years in duration, giving to any cadet the privilege of entering into the second year's class if he should previously prepare himself for so doing. Or, to state the matter differently, raise the standard necessary for admission by the amount of about one year's study, and make the course only four years in length. Provide, then, a preparatory school in the Academy itself for those not qualified to enter

upon the regular course, allowing them the same pay, emoluments, and accommodations as the other cadets.

Perhaps, upon further consideration, I should see insuperable objections to this course, so that I should myself be opposed to it. At present, however, it strikes me as worthy of some consideration, and as such is respectfully submitted.

I have written for the purpose of evincing my respect for the source from whence the request contained in your letter emanated, rather than with the expectation of rendering any essential service to the Commission which will have this matter under consideration. I trust I shall be excused for not attempting to make any further suggestions.

Yours, very respectfully,

CHARLES MASON.

Lieut. J. C. IVES,
Secretary, &c.

I¹.

ROUSE POINT, August 3, 1860.

SIR: I have had the honor to receive from the Commission instituted at the late session of Congress to inquire into the organization system of discipline and course of instruction at the Military Academy, a request to state what modifications or changes in the organization and course of instruction at the Academy are, in my opinion, desirable to secure to the Army officers best qualified to perform their various duties, and to meet all their responsibilities.

Having now, by a prolonged absence from the country and by detached duties, been separated for about two and a half years from the affairs of the Academy, I know so little of the effect on its present condition of the working of changes that have been introduced in the interim, all bearing more or less, and some of them heavily, perhaps, upon both discipline and instruction; so little also, I will add, of the state of local opinion in regard to these matters, that I shall not trouble the Commission with any opinion I have ventured to form upon knowledge and information that I am conscious are quite imperfect. I cannot speak, therefore, of specific modifications that should be made in the present course of organization or instruction.

I will, nevertheless, profit by this opportunity to make a few remarks on some questions in relation to the institution, lately a good deal discussed.

The length of the course.—Shall it be five years, or four years, or shall the length vary with the capacity and proficiency of the cadet, being long for some and short for others? Shall its severity be mitigated?

The great characteristic of the Academy has been that the education is real and, as far as it goes, thorough. That the least proficient graduate had, in fact, mastered the minimum prescribed course, which though, for want of time, deficient in some branches, afforded at least as good an education as any academic course in the country; the education being all the better to the student, the mental discipline the more profitable to him, because the course had kept him steadily up to his mettle, always up to his very best. The course has certainly been thus far successful; that is, has given admirable officers to the Army, and only good ones, and it would in future, similarly conducted, give all in number that the nation might want, by similar tests and trials of the minds and characters of the superabundant applicants.

While a long course of years has served to sanction by its successive results the adaptation to our wants of the kind of education given at the Academy, it has also served to sharpen with the authorities the desire, while keeping fully up the tone of instruction, to supply, as far as possible within the given time, some acknowledged deficiencies, so that good as the result was years ago, it has undoubtedly been gradually improved. I cannot suppose it to be the serious purpose of any who understand the institute and wish its prosperity, to make reduction in any important branches, either in kind and amount, in order that idle or incompetent youths may pass through the Academy into the Army, to be a burden thereon through life, instead of being, as now, thrown off as undeserving the proffered adoption of the nation. As a principle, can there be a doubt that the graduates, as a mass, have made better officers than if the quality had been deteriorated by the many who have been ejected for incapacity or idleness, but who would have gone into the Army through a course that had been made less stringent and exacting, with a view to their passage, or at any rate with the certainty that it would serve as a passport.

So far as the old four year course went, all, by carefully considered and gradual additions and modifications, had become admirable. Still it was acknowledged on all hands that, as it included little in purely English branches, such graduates as entered the institution with little previous instruction left it with an education not fully up to the requirements of the military profession. Raising the qualification for admission could not be resorted to as a remedy, because thereby all candidates would be excluded who, from a geographical position or station in life, had been able to receive but little school instruction, however promising they might be, and in all other respects highly qualified. By such a remedy the Academy would be closed against an annually numerous body of candidates.

Some persons may think that the branches of service to which the least proficient cadets of the four-years' course are assigned, have little need of the science they have been made to acquire, and, possibly, may propose to substitute for this science, or a portion of it, the requisite instruction in English.

These graduates may not, indeed, generally, have much immediate use for the mathematics (for example), but they must, nevertheless, be always greatly the better for their long continued exercises in a course of investigation and reasoning that excludes, absolutely, all specious and sophistical conclusions. Moreover, the four-year graduate, mortified by his deficiency in his own language and literature, may, as many have done, more or less thoroughly, make up for the original deficiency by a course of reading and study that, agreeable in its nature, he will find the more attractive because his four years' habits of close mental application will make the pursuit easy as well as profitable. In the other case, however, he need not be expected to put himself under the hard discipline of mathematical culture, whatever future need he may have for it, if the habit of hard thought necessary thereto had not been duly impressed in his academical course. But if officers in these branches of service have little need in their youth of "exact science," or of those branches of knowledge that are founded thereon, still, though not conscious of the intellectual strength he has acquired by the years of hard thought he has been applying to them, every officer would find great benefit, and the nation derive great advantage, from his possessing these accomplishments as he rises into the higher stations and becomes more and more loaded with heavy trusts and responsibilities. The experience

of our service fully attests that positions of high responsibilities, and varied duties, including even the highest and most varied, are at least as often attained by graduates who probably would have wholly omitted the science of the Academy, if permitted, as by others. Would it have been as well for them and the country?

One of several suggested changes is, that to those cadets who are least proficient the course should be shortened, but not to others showing more aptitude and taste for exact science. If this were done in order to release the former from the most important and profitable labor of their lives, so that they could pass, unoppressed by science, into the life of garrison or field duty, you must commission the higher scholars also, and send them also out into duty only half educated. The alternative of keeping these longer as cadets would not be left, since these also would, of course, except the offer of a commission, on condition of showing neither diligence nor capacity.

To commission these and still keep them at the Academy for further study would not work at all, or not work well, for at least two reasons:

1. There are few young men among such as will make the most efficient and distinguished officers, from ambition, enterprise, and vigor of character, who will not aim at the speediest entrance into actual military life—the quickest release from the irksomeness of continuous study and the tedium of academic routine. So long as the object of their efforts is kept above them, such men will continue to climb, and attain high elevation in reaching for it. But wherever it may be placed there they will stop, having attained its level. Knowing that the chances of advancement in our service will be with those who may be permitted to turn off at this point of the course, they will prefer these chances, and the immediate release from mental drudgery, to accompanying a few of their classmates through some more years of hard study, to end in the more slowly advanced, and more laborious, though intellectually higher, branches of the service. As young men of the age of these early graduates are, and ever will be, few will be tempted to remain at the Academy by the offer of more years of study and confinement.

2. But whether few or many remain to proceed with the more elevated and difficult parts of the course—being officers now, a broad separation from the rest of the students, must interfere materially with discipline—there will be frequent recurrence of circumstances in which these officer-students would be prone to insist on their superiority of military rank, while there would remain many ties of intimacy with those who for one, two, or three years had been living with them in the common brotherhood of cadet. I was many years ago reasoned out of a belief in this mingling of grades in a common school, where, while none are children, all are in the impetuosity and waywardness of youth.

There cannot be *one* school for both grades; and if *two* on the same ground, they would need to be separated by an insurmountable division wall.

The importance of redeeming the institution from its acknowledged deficiency has induced many to desire an addition of one year to the previous four years; thereby, without giving up any portion of the education that has been found to be of a kind admirably adapted to our wants, being able to give considerable instruction in English language and literature; to enlarge some branches in the course of the ethical profession, and to relieve the four-year programme from too much crowding of subjects, some relatively new, especially by the introduction of the Spanish language. Here is a new chair inserted; several small

branches have been augmented, with a constant desire on the part of all the professional staff to extend their own. How can all this be satisfied without giving more time to the course, or curtailing matters that have hitherto, and I trust ever will be, regarded as indispensable?

I see it is urged that there will really be only seven months of study embraced in the added year, and that the alleged deficiency is too great to be supplied thereby. If there be only seven months in this one year there will be only thirty-five months of study (less than three years) in a five years' course, and only twenty-eight months (less than two and a half years) in a four-years' course.

Now we find that the present course of five years embraces :

1. Military and civil engineering ;
2. Philosophy ;
3. Mathematics ;
4. Chemistry, geology, mineralogy ;
5. Ethics, literature, law, &c. ;
6. French language ;
7. Spanish language ;
8. Drawing ;
9. Ordnance, gunnery ; and
10. Tactics, &c.

If we average these ten general subjects by the thirty-five months of the five-years' course we get three and a half months to each.

If we average them in a four-years' course of twenty-eight months, we obtain 2.8 months for each.

May we not reasonably expect, therefore, that in the seven months that it is conceded the added year will afford to study, a real improvement may be made in the deficient portion of the West Point education? That this will not suffice to make perfect scholars out of cadets alleged to be so greatly deficient is no doubt true ; but when we have seen how much is acquired in the brief periods allowed to them in the numerous subjects specified by the same cadets, who are certainly not less deficient in preparation, therefore, we may reasonably anticipate much improvement in English branches; and also a more liberal scope for the Spanish than a four years' course can supply, and a chance for improvement in other branches (not scientific) that are essential to a military education.

Take another view of the subject : In one case a cadet graduates in four years, and goes as a lieutenant into the duties of his corps ; in another case a cadet graduates at the end of five years.

Which of these two young men will be the better educated for his profession at the end of the fifth year, or any subsequent year, all other things being alike between them?

College courses end, generally, in this country, in four years, but who among the graduates, seeking a profession, considers his studies then terminated, and does not go into a law, a medical, a divinity, an engineering, or other school? Under our circumstances, we must finish the education of our officers at the West Point school, giving to them a course that will correspond in results to that which the young civilians obtain by purely professional studies, added to the college course. The impatience of the people, government, and Congress, our ready satisfaction with make-shifts, will always keep us from establishing a permanent military school of application. Our ready satisfaction with partial results is shown by the willing ear that was lent to the wishes of the cadets themselves in reference to the length of the course. If left to them, there is little doubt that there are few, even of the present

fifth class, who would not now gladly take promotion in the Army instead of the chances and trials of the January examination; few, indeed, who would not gladly evade the studies of the Academy altogether.

I should not, in such an argument, say a word about relative expense if "*the additional expense of adding on another year of study*" had not been urged against the fifth year. This is a fallacy which, nevertheless, told, no doubt, upon the hesitating in Congress.

While the number of cadets remains the same—and the number is fixed by law—the youth who graduates in four years will, of course, during five years, in one of which he will be paid as lieutenant, cost more than the cadet who, during the five years, is paid only as a cadet, so that there will be an actual annual saving to the country, by the five-year over the four-year course, of the difference between a cadet's and a lieutenant's annual pay and allowances multiplied by the number of cadets in the first graduating class. For example: the thirty-five cadets of the present first class will receive as cadets between \$30,000 and \$40,000 less during the current year than they would receive if now promoted after four years of study.

Moreover, so long as the Academy supplies supernumerary lieutenants—that is to say, more than the occurring vacancies—there will also be a saving by the lesser number (one-fifth) of those supernumeraries, who are all paid as lieutenants.

Unavoidable circumstances have so interfered with and delayed compliance with the request of the Commission that, though conscious of the rambling tenor of this letter, I commit it to their consideration as it is rather than by further delay to risk being thought unmindful of the respect to which they are entitled.

I have the honor to be, very respectfully,

JOS. G. TOTTEN,

Brevet Brig. Gen. and Col. of Engineers.

Hon. JEFFERSON DAVIS,

West Point, New York.

K¹.

BERKELEY SPRINGS, VA., August 3, 1860.

SIR: Your communication of the 18th ultimo found me absent from Washington, and only reached me a few days ago, which must account for my not having answered it sooner.

With regard to the course of instruction at the Military Academy, I can only express a general opinion, based upon my observation of the graduates in my official intercourse with them for several years past. From this observation I think that there is not sufficient attention paid to their *purely military* studies, especially to that part which is called into immediate use when they join their posts. Although the Army regulations form a portion of the course, I have never yet met with one who could make out a correct morning report, provision return, requisition for fuel or stationery, or, in short, any one of the papers in daily use in the service without further instruction. This is wrong, and frequently leads to much confusion and error in the rendition of returns and reports to the various departments and bureaus of the Army. The young officer who is liable to be placed in the command of an important military post, immediately upon joining it, should at least have some practical knowledge of the papers necessarily used in

the daily administration of its affairs. It appears to me, then, that the course of instruction is too scientific, and not sufficiently practical, and hence we find our young officers generally deficient in the kind of information most necessary for the discharge of their daily duties. As West Point is no longer a school exclusively for engineers, but furnishes officers for every branch of the service, I do not see the absolute necessity for having *only* a scientific man at its head, for the duties of the Superintendent are not such as to bring science into requisition. Not required to teach any one branch, and surrounded by an academic staff unsurpassed by any in the land, he can safely confide the course of elementary instruction to them, and devote his time to the military and administrative duties of the station. The act of June 13, 1858, making appropriations for the support of the Army, removes the restriction by which the selection of the Superintendent was conferred to the Corps of Engineers, and enables the President to select any officer for that position whom he may deem competent to perform its duties. Upon such selection it is certain that much of the military character of the cadets will depend, but the removal of the restriction can hardly fail to prove beneficial. The selection might well be confined to the field officers of the Army, and preferably to the lieutenant-colonels. The higher the grade from which the Superintendent is selected, the larger will be the number of officers from whom the instructor of tactics may be chosen, and the greater the probability that a suitable one will be selected for this most important position. The duties of instructor are of a peculiar nature, and require in him traits of character and disposition which, it is safe to say, many officers do not possess. The law which requires the instructor of tactics to teach all the systems for the different corps is, in my opinion, disadvantageous to the service, as it is but natural that he should give the system of his own corps the preference, perhaps even to the neglect of the others. Human nature is the same in the cabinet and the field, and we are all prone to consider our own particular branch of duties as the most important. I would, therefore, modify this portion of the organization, and suggest that, instead of instructor, the lieutenant-colonel be styled "inspector of tactics"; that he be charged with the supervision of the instruction in the several branches; and that a captain from each of the corps be detailed to instruct in the system of his own corps. By this means a generous emulation would be excited, and the proficiency of the pupil would be due to the exertions of the instructor in each branch, modified by his own natural bias. In a word, I would relieve the inspector from the section room and employ him in tactics on the plain. Let him teach practically what his assistants teach in theory. His executive duties would, of course, be regulated by the regulations of the Academy, under the orders of the Superintendent.

I will now close this brief exposition of some of my views on the subjects referred to in your letter, with the sincere hope that the labors of the Commission may result in benefit to the Academy, and also to the service in general.

I am, sir, respectfully, your obedient servant,

ROBERT C. BUCHANAN,

Brevet Lieutenant Colonel, Major Fourth Infantry.

First Lieut. J. C. IVES, *Top'l Eng'rs,*

Sec. Military Academy Com., West Point, N. Y.

L¹.

WEST POINT, NEW YORK,
August 6, 1860.

SIR: I have the honor to submit the following answers to the list of questions submitted to me by the Commission appointed under the act of Congress of the 21st of June, 1860:

Question 1. "What subjects are taught in your department?"

Answer. Ordnance and science of gunnery. Ordnance embraces the theory and preparation of *gunpowder, projectiles, cannon, artillery carriages, implements, machines, small arms, ammunition, and military and ornamental fire-works*. The science of gunnery embraces a study of the *movements of projectiles*; the *theory of pointing fire arms*; the *different kinds, fires, and their effects*; the art of *breaching*; and the *composition of batteries*.

The time devoted to these subjects in the section room is fifty-eight lessons of one hour each.

Question 2. "Reference being had to the objects for which the Military Academy is established, should the teaching in any of these branches be extended; and, if so, in which, and how far?"

Answer. No change in the length of the course is proposed.

Question 3. "What method of instruction is pursued in your department; and are there any modifications which would improve it?"

Answer. The method of instruction is the same as in other scientific departments of the Academy, viz: the study of text-books, demonstrations and questions, and occasionally short lectures describing the most recent improvements and experiments in ordnance and gunnery. The movement of projectiles, and the causes of their deflection, are illustrated by special apparatus; and the construction of small-arms is explained by actual specimens of the different parts in the various stages of manufacture.

I have no improvement to propose on this method of instruction.

Question 4. "What practical instruction is given in your department? Should this be extended or curtailed?"

Answer. The cadets of the first class are practically taught in the month of July the duties of an ordnance laboratory, *i. e.*, each cadet is required to prepare with his own hands one or more specimens of all kinds of ammunition, military fire-works, and, to a certain extent, ornamental fire-works. He is required to assist in proving powder, in determining the pressure on the bore of a cannon, the initial velocity of projectiles, and, incidentally, in measuring the ranges of projectiles with the plane table. He is taken to the West Point foundry to witness the operations of constructing cannon and projectiles, testing cannon, metals, &c.

The foregoing are all the duties that can be practically taught at present at the Academy.

Question 5. "How many hours study should the cadet give daily to be proficient in the course prescribed for your department; and to what extent should this be increased or curtailed by any modifications proposed by you?"

Answer. From *two to three* hours. The change proposed in my answer to the second question does not affect this.

Question 6. "How many hours daily is each cadet occupied in recitation and in the section room in your department?"

Answer. *One* hour every other day.

Question 7. "Is the amount of daily study required in your department such as to overtax the student, regard being had to the demands made upon him by other departments at the same time? What modifications would the changes proposed by you introduce?"

Answer. For a portion of the year, or for every other day from October 1, to about the 7th of December, the cadets of the first class are required to recite three times a day. I think twice is sufficient.

Question 8. "Is there any indication of overwork or weariness of study among the cadets in any of the departments in the recitation room or examination hall?"

Answer. I have occasionally seen such indications; but they were manifested by persons who were naturally inclined to be indolent. I do not think that the cadets are overworked in any department of the Academy.

Question 9. "Have you any modifications or changes to suggest not embraced in your answers to the foregoing questions, respecting the course of instruction, that would, in your opinion, conduce to the better accomplishment of the objects of the establishment of the United States Academy?"

Answer. I have none.

Respectfully submitted.

J. G. BENTON,

Capt. Ordnance, Instructor of Ord. and Gun'y.

Lieut. J. C. IVES, *Top'l Engr's.*

Secretary of Congressional Commission.

M 1.

WEST POINT, NEW YORK,
August 7, 1860.

SIR: In answer to the questions proposed by the Commission of which you are president, I have the honor to state:

First: That a portion of the physics of chemistry, chemistry, mineralogy and geology, are taught in my department.

In chemistry and the physics of chemistry the cadets of the second class recite on alternate days, in the forenoon, throughout the academic year, giving to chemistry about eighty-three lessons, and to chemical physics twenty-five lessons, including in these all the reviews. In this time they are expected to be well versed in some two hundred and twenty pages of chemistry, closely printed, and about one hundred and twenty pages of the physics.

The cadets of the first class, including the reviews, make only the sum of forty recitations in mineralogy and geology, embracing about two hundred pages in all. In addition to this, other instruction is given, as will be hereinafter noticed.

Second: None of these branches admit of curtailment. It is important that ninety or one hundred pages should be added, in notes, in the second class course, upon metallurgy, the chemistry of cements, agriculture, food, &c. Some forty pages should be added, in notes, to the geological course.

Third: Instruction in this department is by regular lessons in the text-books with corresponding recitations; but a *large part* of the instruction is given by short lectures and conversations during the recitation.

Fourth: In mineralogy the cadet is practiced with a large variety of specimens, which are changed from day to day. The same course is taken, as far as it is practicable and possible, in geology. Much greater facilities are wanted for this kind of instruction, particularly in paleontology.

In chemistry, some more practical instruction should be given—all, indeed, that can be given in the time allowed to this branch, without interfering with the acquisition of that general chemical knowledge essential to all educated officers. For this, however, increased means are indispensable.

Fifth: On an average, the lessons in the second class require two and a half hours for their preparation; those in the first class require two hours. The proposed additions to the course would require, in the first class, ten additional lessons, or an equivalent increase of time for each of the forty lessons. If nothing is transferred from the chemical department in the second class, the value of twenty-five additional lessons will be needed there.

Sixth: The cadets in this department are in the section room one hour on alternate days.

Seventh: Cadets are not overtaxed in the chemical department.

Eighth: Cadets have little opportunity to exhibit weariness in this department. It has sometimes occurred to me that they had not command of time enough to thoroughly acquire their lessons.

Ninth: If the five-year programme continues its existence, there will be a great propriety in introducing into this department a short course of physical geography. The intimate mutual dependence of this subject and that of geology naturally associates them together.

A large increase of our cabinet is absolutely necessary, to render it anything like what it should be. For this a distinct appropriation will be necessary. The want of more eligible section rooms *seriously interferes* with the proper instruction of cadets in this department.

Very respectfully, your obedient servant,

H. L. KENDRICK,
Professor of Chemistry, Mineralogy, and Geology,
U. S. Military Academy.

Hon. JEFFERSON DAVIS,
President of Commission, &c.

N^o.

WEST POINT, NEW YORK,
August 7, 1860.

SIR: To the questions proposed in the letter of the secretary of the Commission of which you are the president, under date of July 23, 1860, I have the honor to reply—

1. That, in assigning graduates of the Military Academy to corps or arms, no mode occurs to me which it would be advisable to adopt other than the one now pursued here. While it is quite possible that this mode may fail sometimes to put exactly the "right man in the right place," it is the result of my observation that its failures are far less frequent and less important than some have imagined. I am unaware of any errors so marked as to have attracted much attention.

Any system which will have a tendency to depress that spirit of emulation which now so happily obtains in the corps of cadets, at least in

the higher classes, will be fraught with enduring mischief. If there were no other serious objections to any probable modification of the present plan, this, in my opinion, would be a fatal one.

2. If the troops on distant service were concentrated in respectable masses it would certainly be well for officers of the staff to serve with them for a limited time, doing the duty of line officers. Even split up, as experience proves our army, in peace, always will be, it may be worth the experiment.

3. I think that officers of the line generally do not pursue their professional studies to any great extent after entering their respective arms. A system of examinations, resembling that which now obtains in the medical corps, without, however, making them at all so rigid, would remedy this defect.

Very respectfully, your obedient servant,

H. L. KENDRICK,

Prof. Chemistry, Mineralogy, and Geology, U. S. M. A.

Hon. JEFFERSON DAVIS,

President of Commission, &c.

O¹.

NEW YORK FREE ACADEMY,

August 7, 1860.

DEAR SIR: Since I did myself the honor, some days ago, to reply to your letter of the 18th ultimo, I have reflected further and examined more minutely into the course of study and discipline as described in the official document before me, and I think that I have noticed a defect, a serious one, too, in the arrangement of the applied mathematics at the Military Academy.

During the three first years the course of study in the pure and mixed mathematics is all that could be desired, with the exception, however, that there is, in my opinion, much more required of the students than can well be performed in the third year of that course. I do not see how the whole course of natural and experimental philosophy and astronomy can be completed in one year, more especially when we reflect that the subjects of that course are no longer the same that they were even ten years ago. I recommend, therefore, that astronomy be transferred and studied in the fourth year, and that the other subjects of the mixed mathematics remain where they are, and occupy the same time in the course that the whole do at present.

I have another object in view in recommending this change. In the second class I do not understand that there is any applied mathematics whatever; or, in other words, the subject is entirely omitted by that class. This, it seems to me, is an error, and ought to be remedied, and I see no more judicious remedy than the one I propose.

By the specifications of the course of the first class, I conclude that there is no application of the mathematics, except in the department of engineering, and as that subject must contain necessarily a good deal that is descriptive and historic, I am not able to say nor form an opinion how extensive that application may be the last year. I see no reason why the cadet should not, through his entire course, be taught almost daily some mathematical application, which can be so arranged as not to interfere in the discharge of his other duties.

The military exercises and military instruction occupy, as I notice by

the official register, a pretty large proportion of the time of the cadets. It is probably right that such should be the case, subject, however, to the condition that those exercises should not interfere with the time necessarily required for learning thoroughly the lessons in the other departments of instruction.

During the encampment, which I believe is something longer than two months in each year, the whole time of the cadets is occupied in military instruction. The object of the encampment is for that purpose. At other periods of the year other departments of instruction ought to have rather the pre-eminence, for many of the subjects of learning in the course, if not acquired while the individual is at the Academy, will never be acquired; whereas there are, I believe, many things in the present military programme, as shown by the register already mentioned, which could be as well learned elsewhere.

Within a very few years, even within the period since the commencement of our late war with Mexico, the military art, and the sciences subservient to and connected with it, have become very much extended by new discoveries and by new applications of the principles of science already known. If we, therefore, intend to be provided for any emergency to which we as a nation are always exposed, in a greater or less degree, it becomes us to cultivate the art of war to its greatest perfection. It is, therefore, I am clearly of opinion, important that there should be established a school of practice supplementary to the one at West Point, where the graduates should be sent for a longer or shorter period before they join their respective arms of service.

This school should not only be intended to train the young officers sent there to the greatest degree of perfection, but it should also be intended to try all manner of experiments in relation to the science and art of war.

I have the honor to be, very respectfully, your obedient servant,
HORACE WEBSTER.

J. C. IVES, *First Lieut. Top'l Engr's,*
Secretary.

Pl.

WATERBURY, CONNECTICUT,
August 8, 1860.

DEAR SIR: In accordance with the request of the Commission, I have the honor to submit for its consideration the following modification of the circular usually addressed to the candidate for admission to the Military Academy:

In the fifth line of the "qualifications," after the words "the candidate," erase all to the words "failing in any of these particulars," &c., and insert, "will be required—

"*First.* To read the English language in a clear and distinct tone of voice, and with particular attention to pronunciation, emphasis, and pauses.

"*Second.* To write in a fair and legible hand, in proper form, and without mistakes in spelling, such sentences of prose or poetry as may be read to him by one of the examiners.

"*Third.* To give clearly the rules for the various operations of arithmetic above specified, particularly for vulgar and decimal fractions, and proportion, with the reasons therefor, and to solve and explain fully and

without hesitation any examples which may be proposed to illustrate these rules."

Very respectfully, yours,

A. E. CHURCH,
Professor Mathematics, U. S. Military Academy.

Lieut. IVES,
Secretary of Commission, &c.

R¹.

Answers to the questions of the Commission, instituted by the act of Congress of June 21, 1860, to examine into the organization, &c., of the United States Military Academy.

Question 1. The subjects taught in the department under my charge are embraced under the general heads—First, *civil engineering*; second, *military engineering*.

Detailed programmes for each of these courses have been drawn up and submitted for adoption by the proper authority; but it is believed that no action has been taken upon them up to the present time. The subjects comprised in each course, and their respective times, as recommended in the programmes, are as follows:

CIVIL ENGINEERING.

	Lessons for first section.	Lessons for lower sections.
Building materials.....	8	10
Masonry.....	5	6
Farming.....	4	4
Bridges generally.....	5	6
Roads and railroads.....	4	5
Canals.....	2	3
Rivers and harbors.....	2	2
Architecture.....	6	6
Stone-cutting.....	5	5
Applied mechanics.....	21	9
Total.....	62	56
	<hr/>	<hr/>
Total lessons first section.....	62	
Review of first section.....	18	
Machine, &c., drawing.....	24 lessons.	
Total disposable time.....	104 days.	
	<hr/>	
Total lessons lower sections.....	56	
Review of lower sections.....	24	
Machine, &c., drawing.....	24 lessons.	
Total disposable time.....	104 days.	

MILITARY ENGINEERING.

Lessons for first section. Lessons for lower sections

Field fortification	8	10
Permanent fortification.....	25	28
Attack and defense.....	7	8
Examples of sieges.....	3	3
Frontier defenses.....	5	5
<hr/>		<hr/>
Total lessons.....	48	54
Review of lessons.....	18	18
Fortification drawing.....	36	24
<hr/>		<hr/>
Total lessons in military engineer'g,	102	96
Review of civil engineering.....	12	18
<hr/>		<hr/>
Total disposable days.....	114	114
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REMARK.—The difference in the distribution of time for the first and lower sections arises from the difference of capacity of sections, and of supposed wants of arms of service.

Question 2. I think the courses as they now stand are well balanced and sufficient to meet the wants of the service. They both, from the nature of the subjects embraced in them, admit of almost indefinite extension; but, considering the necessarily general character of this school, I do not think any further expansion desirable.

Question 3. Instruction is given by text-books, in which lessons are given out for daily recitations and by lectures and oral explanations given by the professor or the immediate instructor of a section.

Drawing is taught under the eye and guidance of the professor and his assistants.

Models and engravings are used as illustrations.

Question 4. If by this question is meant instruction in some purely mechanical operation, the answer is, none, except in handling mathematical drawing instruments.

Question 5. I should propose *four hours* as a fair time for the smallest capacities to prepare quite understandingly the subjects embraced in any single day's lesson.

Question 6. Each cadet is present at recitations one hour and a half; his own recitation may vary from six to thirty minutes—depending upon the subject he may have to recite upon. Three hours daily are given to drawing, but during this exercise there are no recitations in the department.

Question 7. I do not think that the daily preparations required of the cadet in this department can be onerous, provided the instructors in the other departments confine their lessons within the limits laid down for their being accomplished by the Military Academy regulations.

Question 8. I think that for several years back the cadets have been overtasked; that too much has been attempted at the Academy, and that there is a falling off in interest in their studies by the cadets about their third year at the Academy, attributable, in my opinion, to the tension of the first two years. In my own department this is very visible to my apprehension, and it requires unwearied exertion on the part of the professor and assistants to keep up the flagging interest of the lower sections.

Question 9. I have none in my department. I believe that experience shows that it has accomplished all that a sound thinking mind would deem requisite for accomplishing what, according to my view, was the object of the establishment of the United States Military Academy, viz: a school from which the various arms of the service could be recruited with officers capable of performing the special duties of their arm, and those incident to it, growing out of the phases of service before an enemy.

Respectfully submitted.

D. H. MAHAN,
Professor of Engineering.

WEST POINT, August 10, 1860.

Memoranda with respect to legal provisions for the organization, &c., of the United States Military Academy.

1. Duties of the Superintendent to be defined.
2. The professors and other heads of departments of instruction designated.
3. Duties of professors and heads of departments and those of their assistants defined.
4. Professors and others composing the Academic Board to be designated and their duties defined.
5. Rank of professors and other heads of departments designated.
6. Rank of assistants designated.
7. Courses of instruction and their assignment to the appropriate professorships, &c., designated.
8. The order of time in which the courses of instruction shall be given.
9. The total and daily time that shall be given to preparation for and recitation upon each course of instruction.
10. Number of examinations yearly prescribed.
11. Decisions of Academic Board on results of examinations to be final.
12. Cadets found not proficient in any study or in conduct to be discharged and not permitted to be restored.
13. The relative weight to be given to the various studies and to conduct in forming the general annual merit rolls to be fixed.

The provisions numbered from one to six, inclusive, are deemed necessary for the proper and harmonious working of all the parts. Nothing here should be left vague. There should be no opening for the exercise of powers not granted. For general purposes the Academic Board should be limited, say, to five or six members, including the Superintendent, who shall preside at its sittings. For the examinations, the head of the department under examination, his senior assistant, and during the examination of any section of the class, the habitual instructor of that section shall be members of the Academic Board for the purposes of the examination of the particular branch of instruction. Army rank should alone govern among all Army officers on duty at the Academy. There is really no good reason why there should be any difference in the pay and emoluments of the assistants who are Army officers; the more so if service at the Academy is limited in time, and regarded as any other term of detached service. Such a provision, moreover, will remove all cause of jealousy and heart-burning. At pres-

ent, a brevet second lieutenant only just graduated, may, by being the principal assistant in one department, be entitled to the pay and emoluments of a captain; whilst an old first lieutenant in another department, who is not the principal assistant, will only be entitled to the pay and emoluments of his Army grade. This is no hypothetical case. It has frequently happened.

The provisions numbered from seven to ten inclusive it is thought the experience derived from the forty years in which the Academy has worked under its present organization will give ample and satisfactory *data* for without leaving anything vague.

The provisions marked eleven and twelve seem called for from what can only be termed abuses in restoring cadets found deficient in studies or conduct, as shown by the records of the Academy. Moreover, when it is considered that, sickness or some like accidental cause apart, deficiency in either of these respects can arise only either from inability to discharge certain prescribed duties necessary to make a good officer, or from a neglect of these duties, it is unjust to the Academy and to the great body of youths who are yearly striving to gain admission into it, and injurious to good order and discipline among the able and well disposed of its members, to keep in it an inefficient or disorderly subject. To do so is to hold out a premium to dullness and disorder.

The provision numbered thirteen is of great importance, as upon it will depend, to a considerable extent, the time and attention which the cadets will give to each branch of instruction. Experience shows this.

S^t.

WASHINGTON, D. C., August 11, 1860.

SIR: I have the honor to acknowledge the receipt of your letter of the 18th ultimo, in which I am requested, by the Commission instituted by act of Congress "to inquire into the organization, system of discipline, and course of instruction at the United States Military Academy," "to state what modifications or changes in the organization and course of instruction at the Academy are, in [my] opinion, desirable to secure to the Army officers best qualified to perform their various duties, and to meet all their responsibilities."

In my reply I shall confine myself to remarking upon the present organization of the military departments.

In my opinion, each of those departments should have a separate and distinct instructor, who should be directly responsible to the Superintendent of the Academy, and to no other officer, for the *theoretical* and *practical* instruction in his department; that each instructor should have a sufficient number of assistants; that each instructor and his assistants, in any one department, should be officers in corps or regiments of the Army, corresponding to the department of which they are in charge at the Academy; that is, the instructor of artillery and his assistants should be officers of artillery; the instructor of cavalry and his assistants, officers of the mounted corps; and the instructor of infantry and his assistants, officers of infantry; and that the officers on duty in any one of said departments should not be required to perform duty in any other department at the Academy.

I am further of the opinion that the instructor of infantry should be commandant of cadets; that the course of studies at the Academy

should require five years from beginning to completion, and that no person under the age of fifteen years, nor over that of twenty, should be appointed a cadet.

However much it might be deemed proper to extend or limit the course of instruction in any one department, it is important that the instruction therein should be *thorough*, so far as it goes. I believe the organization I have suggested would best effect that in the military departments, and, regulated so as not to operate to the prejudice of any of the other departments of the Academy, could not but "secure to the Army officers best qualified to perform their various duties, and to meet all their responsibilities."

I am, sir, very respectfully, your obedient servant,

H. F. CLARK,

Captain and C. S., U. S. A.

First Lieut. J. C. IVES, *U. S. Top'l Engr's,*
Secretary U. S. Mil. Acad. Commission, West Point, N. Y.

T^l.

WASHINGTON, D. C., *August 10, 1860.*

SIR: I have the honor to make the following statement in answer to your circular of July last.

I believe that the term of service at the Military Academy should be five years.

The fifth year should, in a great measure, be taken up by practical instruction in the duties belonging to the several corps of the Army. The practical duties of the cavalry, artillery, and infantry soldier are in a great degree already taught, so that the fifth year might be profitably devoted to the instruction of the cadets in the duties properly belonging to the scientific corps of the Army and those of the general staff.

Among the former, I specify military reconnaissances, field astronomy, geodetic surveying, construction of field fortifications, attack and defense of fortifications, construction and design of buildings, manufacture of ordnance and small-arms, steam-engines, derricks, and cranes; and among the latter the duties of a quartermaster, commissary, and adjutant general, post and regimental adjutant, and instruction in the manner of rendering accounts and making contracts according to the regulations of the Army. In all of three things the cadet could, in a short time during the *fifth* year, receive instruction which will be of the greatest use to him ever after. He could, in that year, gain detailed information in the various branches of his profession that he will never be able to procure afterwards; for it is a well-known fact that young officers are often, very soon after their graduation, placed in charge of works and surveys requiring a practical knowledge, which so far it has been impossible for them to obtain beforehand. They get it by hard work in the field and in the office, but I believe it is the experience of every officer that much valuable time would have been saved had this knowledge been imparted to him by competent instructors before he was placed upon the duty requiring it.

In the fifth year the cadet need not be under the same discipline that those of the lower classes are subjected to. The proper instruction in the duties indicated will involve a more or less protracted absence from

West Point, and, during the stay of the first class on the Point, their duties may be made to keep them entirely separate from the other cadets.

I believe that a very great improvement in the internal economy of the institution would be made by so arranging the study hours that all of them should be before dinner. There are now seven study hours between breakfast and tea, two of which are after dinner, dinner being at one o'clock. If the dinner hour be changed to three o'clock, the same number of study hours might be obtained, all of them before dinner. But the whole seven hours are not devoted to study. Riding and fencing exercises take up, in nearly every class, one of these hours. Should these exercises be thrown out of the study hours, it might be possible to reduce the study hours to six, by that means bringing the dinner hour to two o'clock, or the breakfast hour to eight o'clock instead of seven o'clock.

The instruction in drawing, geology, French, and Spanish (in part), tactics and theoretical artillery are all given after dinner, between two and four o'clock; and I think the universal testimony of professor and pupil would be that they could all be more profitably taught and learned before dinner.

The hours for drill would, by this arrangement, be made more convenient in the short days of the fall months.

The method of recommendations for appointments to the different corps of the Army by the Academic Board, it seems to me, is open to the objection of partiality to the Corps of Engineers to the prejudice of some of the other corps of the Army. The Corps of Ordnance and Topographical Engineers require as much scientific attainment and as much general talent as the Corps of Engineers. Yet, the appointees to these corps are generally considered unfit for appointment in the Corps of Engineers by the Academic Board, and the Corps of Engineers monopolize as many of the head men of a class as the Academic Board thinks of sufficient talent to enter that corps, leaving the other two staff corps to be filled up with men who, if their class standing is the only criterion, are in every case inferior to the officers of the Corps of Engineers.

If no distinction were made among these three corps in the recommendations of the Academic Board, this unjust discrimination would be removed. No injustice would be done to the head men of the class, because their graduating standing would give them choice over those who graduate below them, and they would still be able to enter the Corps of Engineers if they should choose that corps. The other two corps would, in many instances, get the head men of a class. Their standard would be raised, and that of the Corps of Engineers would not be lowered.

But, independently of these arguments, the present system is, in my opinion, a degradation to the Corps of Ordnance and Topographical Engineers, and should therefore be changed.

I am, very respectfully, your obedient servant,

W. B. FRANKLIN,

Captain Topographical Engineers.

Lieut. J. C. IVES, *Top. Eng.,*

Secretary of Commission, &c.

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Answers of Colonel Delafield, Superintendent of the Military Academy, to the interrogatories of the Commission, appointed by Congress to inquire into the organization, system of discipline, and course of instruction, &c., at the Military Academy.

“Question 1. Are there any modifications or changes in the organization of the academic staff, and in the manner of appointing the professors and assistant professors, that are, in your opinion, desirable?”

Answer 1. The organization of the academic staff, as provided in paragraph eight of the regulations for the government of the institution, is, I conceive, well adapted to subserve the purposes and intentions for which it was originally designed, as well as the best interests of the Academy, when confined in its action to prescribed and appropriate functions. It will be observed that part of this staff constitutes the Academic Board, which, as provided in paragraph nine, is also as well organized, in my opinion, as the nature of the case permits, to fulfill its proper functions. I consider no change in this organization desirable.

2. At the present time there are twelve departments of instruction, under charge of eight professors, created by law, and four instructors; the latter holding military rank in the Army, and eligible, as such, to those four departments.

3. The appointment of the eight professors is permanent, and subject to no prescribed limit of time, except as consequences of the rules and articles of war, to which they are amenable.

4. The four instructors are appointed, by detail, from the Army, liable to be ordered on duty elsewhere at any time, and subject to the rule of service, that no officer shall be absent from his regiment, or duties of his corps, more than four years. (Paragraph 34, Army Regulations.)

5. Of the eight professors, three may be taken from the Corps of Engineers, and, if they prefer, can remain in it, subject to all its varied duties and details, retaining their Army rank; but in case of resigning their commissions in the Corps of Engineers, to secure uninterrupted professional duties, they then become, as in the case of the five others, without military rank in the line of the Army and come under the arrangement stated in paragraph 3.

6. There is an advantage and disadvantage in appointing the professors from civil life, and making the position permanent, depending upon executive removal for cause; and that of appointing them from the Army, to return to its duties after a series of years. Neither system, however, can be fully carried into effect. The professors of French, Spanish, ethics, including the chaplaincy, and drawing, in its comprehensive and artistic sense, are not as a general rule to be found in the Army for these details. Those of engineering, philosophy, mathematics, and chemistry, &c., can at all times be filled from some of the corps of the Army.

7. The manner of appointing the *eight* permanent professors is by the President's nomination, confirmed by the Senate. A disadvantage of this system is, that there is no certain means of insuring continued competency, or of obtaining a substitute for incompetency, that may by chance have gained a professorial chair, or of vacating such professorships when rendered incompetent by age, sickness, or infirmity. These causes cannot be taken cognizance of under any existing military code. They constitute no criminality to be tried by any tribunal. Hence this system of appointment is liable to the serious objection of the natural

consequence of incompetency from age, as well as from other cause, with no other corrective than displacing the incumbent by executive will—a means not likely to be resorted to until the effects have operated for many years to the prejudice of the institution.

8. The advantage on the other hand of permanency in the several professorial chairs is unquestionably very great to the institution, so long as competency is maintained. Aptitude for imparting instruction to youth is a rare talent, by no means the accompaniment of scientific attainment. The latter is more common, and more readily commanded than the former, and a combination of the two faculties is not often to be found. The individual possessing both, with other necessary qualifications, should not, under any system, be discharged or relieved from a professorship by limitation of periods of five, ten, or more years. The system of permanent appointments has the great advantage of enabling the professors to keep pace with the advancement of science, demanding perpetual and incessant study of the specialty of each department of instruction. So great, indeed, are the changes in the branches of science taught here, that the professors can only call to their aid as assistant instructors the graduates of recent date, who may have profited by the study of the last editions of their respective texts. To fill the professorships by new appointments from the Army every ten or more years, would, I conceive, be very hazardous, and by no means calculated, as a rule, to insure favorable results.

9. The four chiefs of departments of instruction, appointed from the Army, have, as a general rule, been selected by the authorities at Washington, unaccompanied by recommendation, nomination, or advice from the institution. They are liable to repeated changes, three of them to the rule of service that no officer shall be detached from his company, regiment, or corps longer than four years.

18. While this rule is of great advantage in securing perpetually young, ambitious, zealous, and capable *subordinate* instructors, it is not without serious inconvenience, and especially so in the case of the chief of a department. The four departments so organized have not to this day a matured and unchangeable course of instruction to put into the hands of the cadet. Nor can the institution at this moment profit by any instruction or experience of the four officers who have filled these stations for the past three years and more, in the event of their being relieved.

11. No one of them, or of their several assistants, has ever had time to prepare a course of studies on any one of the subjects taught by them; progress has been made by many of them, as well as by their predecessors, yet not even a lithographed text has as yet been matured for any one branch of their respective courses. At this time, one of the chiefs of these departments and three of his assistants are to be relieved under the rule referred to, to be replaced by others who have to commence the study of each and every subject. This is destructive to any permanent or satisfactory course of instruction, and if the rule be thus indiscriminately applied, and no corrective introduced, it will forever prevent these branches being perfected or brought to any approximation in proficiency, compared with the departments under permanently appointed professors.

12. I am decidedly of opinion that no other system than permanency, without regard to any fixed period, could have attained such results as we now witness. The Executive, under existing regulations, can at all times, as has heretofore been the practice, obtain the necessary infor-

mation to remove incompetency among the permanently appointed professors, through the annual visit of the inspector, as provided by paragraph one of the Academic Regulations.

13. A retired list that would provide for long continued faithful professorial services, in connection with the duty of the inspector and War Department, seems to be the only reasonable and just corrective for the disadvantages of permanent chiefs of departments. To take the professor from the junior ranks of any staff corps, and, when *incompetent*, return him with high rank, would be as injurious to such corps as leaving him at the Academy, at the same time that it would do great injustice to the members of such corps as had encountered all the vicissitudes incident to the general service, together with the disparagement of being ranked by the favored professor, who had never gained any experience in his profession, or encountered any of the inconveniencies attending it.

14. I consider that much of the evil arising from the periodical changes of the four *instructors* may be obviated by their professorial duties being restored to the departments organized with permanent chiefs. The commandant of cadets and his four assistants were, until a very recent period, the instructors of military police, administration, and discipline, and tacticians of the basis of an army, the infantry arm.

15. They are now made with an additional assistant, the tacticians of infantry, artillery, and cavalry, as well as professors of four branches of instruction transferred (as I think unnecessarily) from the course of military engineering, together with the instruction in the section room of the tactics of the three arms, and with veterinary science; thus occupying their time with study and recitations, instead of attending to the police and discipline of their respective companies of cadets.

16. The entire organization of this branch of the academic *staff* has undergone a great change within the past four years, its duties continually increasing, as well as changing, until at last it has become such that no officer of the Army can be expected to have a special knowledge of the many subjects forming his course of studies and instruction.

17. The minutia of the mere manuals and drills or tactics of the three arms can doubtless be mastered by the officer called to fill this station, yet we cannot expect to find one possessing the information to qualify him for instruction on first entering upon the duties.

18. When it is considered that we should give as much of the practice of these three arms as time will permit, then the limit of general knowledge of an infantry, artillery, and cavalry officer ceases to be a guarantee for the specialities of such practical instruction, and in like manner, it seems to me, we cannot find the officer of one arm of service qualified as an instructor of army organization and administration, equitation and veterinary, outpost duty, strategy and grand tactics, combined with all the preceding qualifications. I do not believe we ever could have given the cadets the present practice of artillery and cavalry under such an organization.

19. The artillery cannot rise to that importance the national interest demands under an infantry officer. The field of practice in this arm alone is enough to call for all the energies and talents of the officer. In like manner the cavalry arm, including veterinary science, and use of its special weapons, is not likely to be improved under artillery or infantry officers. We have a remarkable instance of a cavalry officer having greatly contributed to the improvement of the infantry arm by devoting himself thereto; but that is an exception to the rule, and not to be expected hereafter.

20. I would recommend that the instruction in tactics and practice of both artillery and cavalry be assigned to special instructors, except when the commandant of cadets is an artillery officer, when he shall have charge of that branch, and when a cavalry officer shall have charge of that branch.

21. In addition to the officers and professors constituting the academic staff heretofore referred to there are ten assistant professors and instructors provided for by law, and nineteen acting assistant professors and instructors, all appointed from the Army by detail, liable to be relieved at any time, most of them subject to the rule of service that no officer shall be detached from his company, regiment, or corps longer than four years. As a general rule these officers are recommended to the Superintendent by the respective chiefs of departments of instruction, and by him to the inspector of the Academy, and the detail made by the Secretary of War, through the Adjutant-General's Department. Several unfavorable restrictions are placed upon these selections; no one can be taken from the five mounted regiments except two for cavalry duty. The officers in Utah, New Mexico, and on the Pacific coast, are too remote to be available in time to enter upon their duties at the commencement of the academic year. The Quartermaster's, the Commissary's, and the Ordnance Departments and topographical corps, as well as the Adjutant-General's Department, have seldom been enabled to furnish details for the Academy, although repeated and renewed applications have been made for the known talent that exists in the ordnance and topographical corps. Of the four artillery regiments there is a restriction upon the mounted companies, added to which is a virtual prohibition of all the adjutants and quartermasters; thus reducing the class open to selection to a very limited range. The corps of engineers and artillery have, in consequence, been compelled mostly to supply the class of officers now under consideration.

22. The result has been that much practical talent could not be commanded that would have been of great service, and enabled the institution to reflect back to the Army the benefits of such experience.

23. This, I conceive, admits of a corrective, by enforcing the principle of every corps in service furnishing its due proportion on the requisitions as now made, so far as competent services can be obtained. It is but recently that the institution has been enabled to impart any of the practical knowledge of the ordnance corps by an officer of rank and experience of that arm being assigned to the department of ordnance and science of gunnery.

24. The *periodical change* of these subordinate officers is, in the main, favorable. Consisting mostly of the younger members of the profession, it keeps up the military spirit, returns to the Academy the practice gained during the periods they have been in service, and returns to the Army any improvements introduced at the institution during their respective details, with advancement in science, and general military knowledge obtained from the use of the library. Being called upon to instruct only in the courses they were taught while members of the Academy, they soon become capable of teaching the cadet, and at the expiration of four years may be replaced without taking with them the talents and means of improving their respective departments, which rests with the permanently appointed professor.

25. Were these numerous instructors, or any part of them, permanently detailed or installed into office, there would be no sufficient stimulant to zeal or exertion, and in time the magnitude of an indifferent and superannuated academic staff would become an intolerable

burden and incubus upon the institution in which favoritism would doubtless exhibit its baneful influence.

26. The recuperative power and influence of receiving from, and returning to, the Army this portion of the academic staff is, I consider, one of its superior advantages over all other scientific institutions.

27. There is an important and very desirable modification, however, that, in my opinion, should be made to the Army regulation of four-year details in its application to the Academy, to wit: That in no case should *more than one officer* be relieved from a department per annum, unless specially desired by the chief of the department for satisfactory cause assigned to the Superintendent. Last year *nine* officers were relieved and this year *eight* are to be relieved under this rule and other cause.

“Question 2. Are there any modifications or changes in the mode of conducting the annual examinations that are desirable?”

Answer 1. The time spent in January and June in examining the several classes in the various subjects that each and all have been taught during the academic term has steadily increased with the increase in the number of subjects taught at the institution. It was found indispensable necessary to economize this time taken from the study of the course. To do so, the last arrangement was to examine the first class in June, in the presence of the whole *Academic Board*, and all the other classes by committees. It was indispensable the whole board should hear the graduating class examined, to be prepared to sign the diplomas, in conformity with the requirements of the law. In January, the whole board is required to examine the fifth class, that it may recommend them for admission as cadets previous to their being under probation. This system has worked in every respect quite as satisfactorily as the previous one, which required the whole Academic Board to be present at the examination of every class.

2. We have now increased the number of subjects to such an extent as to consume about the same time as under the first system, and some other mode or expedient is desirable for saving the time. So far as my observation extends, the relative *merit* of the members of a class is in a great measure determined by the summation of the daily recitations on the professor's weekly class reports made to the Superintendent, and the deficient members, on the opinions of the professor and his assistants. In some subjects this is in reality the only real grounds upon which to form a judgment, as the subjects now taught are not all comprehended by each and every member of the Academic Board. It is useless from this consideration to exact the present arrangement. (See par. 61 and 62 of the Academic Regulations.)

3. I would recommend that the first class in June, and the lowest, or probationary class, in January, be examined in presence of and by the whole board, to its entire satisfaction; and that all the other classes be examined by the *Professor and his assistants*, arranging the members in the order of merit, and reporting all doubtful cases of proficiency to the Superintendent, who shall cause such individuals to be re-examined by and in presence of the whole Academic Board, to the end that the action in these cases be in accordance with the second paragraph of the seventh clause of paragraph sixty-two of the Academic Regulations. While this arrangement would save much time now unprofitably bestowed on examinations, no injury or prejudice could arise that I can foresee, and the time thus saved in January and June could be more profitably bestowed upon the studies of the succeeding courses—of mil-

itary exercises in the one case in camp, and of theoretical instruction in the section room in the other.

“Question 3. Are there any modifications or changes in the mode of appointing cadets, and in the qualifications for their admission that are desirable?”

Answer 1. A modification in the system now practiced in appointing candidates I consider very desirable, provided it shall not restrict any young man possessing *the legal qualifications* from the benefits of the institution.

2. At present every Congressional district has secured to it the appointment of the vacancy therein as often as it may occur. The modification I would propose, is to secure to the district a *graduate* who shall *enter the Army*, and not merely a youth to *enter the Academy*, which is now the case in many instances.

3. During the last ten years 104 candidates failed to pass the examination for admission, and during the preceding ten years sixty failed in like manner. Of those who were received between the years 1841 and 1850 only 46 $\frac{1}{2}$ per cent. finally succeeded in gaining diplomas; and from 1851 to 1860 51 per cent. succeeded.

4. The number of candidates for admission who have failed is much greater during the last five years than at any former period—being 78 in this short period, while it was 164 in the twenty years above referred to.

5. The Congressional districts retain their equality of benefits just in proportion to the qualifications of their nominees.

6. The following arrangement adopted by a late board, of which the writer was a member, it is believed, would insure more favorable results to the Academy, the Army, and to the respective States, while it would materially favor the cause of primary education throughout our country:

“Instead of one, five candidates be nominated from each vacant Congressional district, to compete for the vacancy before an examining board, of which there shall be one for each State or Territory from which vacancies are to be filled. This board shall select the superior one of each five of said State or Territorial candidates, who, if found proficient in the branches of study required by law and regulations for admission to the Military Academy, shall receive from the board a certificate thereof, which, upon presentation to the Superintendent of the Military Academy by the selected candidate, shall admit him into the institution without further examination than that required by regulations to determine his physical qualifications.

“Each examining board to be appointed by the President and to consist of three members, two to be residents of the State or Territory from which appointed, and the third an officer of the Army who has graduated at the Military Academy, and each of said boards shall hold its examination for candidates within their respective States or Territories, at such time and place as the President may direct.

“The cadets ‘at large’ being appointed by the President from no particular State or district to be examined by the Academic Board at West Point, as at present, or by the State or Territorial board, as may be directed by the President.”

7. These examinations, held annually throughout the country, would be the means of introducing the black-board system of instruction, at the same time that the teachers in the neighborhood would readily comprehend what was required for admission, would prepare their pupils accordingly; and we may hope that at no distant day the standard of

qualifications may in consequence be raised to include English grammar and the geography of the United States. If attended with such a result, the cause of primary education will have been much benefited.

“Question 4. Are there any modifications or changes that are desirable in the mode of assigning graduated cadets to different corps in the Army?”

Answer 1. This subject will be best understood by presenting the facts connected with the assignment and appointment into the Army of the class of forty-one members that graduated in June of this year.

2. They were arranged in the order of merit, deduced from the aggregate merit of every branch of study and conduct, constituting the entire programme, each subject having a value given to it proportional to its presumed influence in forming the mind and character for the military profession. (See paragraphs 65 and 67 of the Academic Regulations.)

3. Under the 10th and 72d paragraphs of the Academic Regulations, the Academic Board is required to set forth, in a diploma given to each member of the class, the several corps of the Army for which such individual is considered to be qualified.

4. The precedence of corps to which the Academic Board thus recommends the cadet highest on the general merit roll was for a long series of years dependent upon the judgment of the Academic Board, and differed in its practice, in some respects, from the present arrangement, which is in conformity with the *orders of the War Department*.

5. The arrangement or precedence of corps for assignment of merit at present is: 1st, the corps of engineers; 2d, the topographical engineers; 3d, the ordnance corps; 4th, the artillery; 5th, the infantry; 6th, the dragoons; 7th, the mounted rifles; and, 8th, the cavalry.

6. The duty of the Academic Board is to recommend the cadet for one or more of these corps, as *considered best qualified*, when the cadet is privileged to make his selection therefrom.

7. This system has the effect of allowing the highest in the order of merit to select from the *several corps* of the Army, while the lowest are confined to a few arms, and not permitted to enter the corps first in the prescribed order of precedence.

8. Of the class that graduated in June, two members were considered qualified for each and every corps in service; the next four for all corps but that of the corps of engineers; the next sixteen for all but the corps of engineers and topographical engineers; and the other nineteen were confined to either the infantry, dragoons, mounted rifles, or cavalry.

9. The choice of the first two members of this class was, first, the corps of engineers; second, the topographical engineers; and, third, the ordnance. Of the next four, the highest made choice of ordnance, and next, topographical engineers; the next of topographical engineers and the ordnance; the third member preferred, first, the ordnance, and then topographical engineers; the fourth of the topographical engineers, and then ordnance. Of the next sixteen members, thirteen gave their preference to the ordnance corps, and three selected infantry; the second choice of this set was, eight for artillery, four for the mounted service, two made no second choice, and two for infantry. Of the nineteen last members, fourteen gave a preference to the infantry arm and five to the mounted service.

10. The annexed tabulated list will show at a glance the recommendations of the Academic Board, the preference of the whole class, and the corps to which they succeeded in being appointed. It is to be

remarked that no member of the class made the artillery arm his first choice.

Recommended by Academic Board.					Preference of graduates.										Into what corps promoted.						
Number of graduates, June, 1860.																					
For all corps.																					
For topog'l engineers, ordnance, artillery, infantry, and mounted service.																					
For ordnance, artillery, infantry, and mounted service.																					
For infantry and mounted service.																					
Their order of preference.																					
For the corps of engineers.																					
For the topographical engineers.																					
For the ordnance.																					
For the artillery.																					
For the infantry.																					
For the dragoons.																					
For the cavalry.																					
For the mounted riflemen.																					
In the corps of engineers.																					
In the topographical engineers.																					
In the ordnance.																					
In the artillery.																					
In the infantry.																					
In the dragoons.																					
In the cavalry.																					
In the mounted riflemen.																					
41	2	4	16	19	First	2	2	15	17	5				2	2	2	7	20	3	4	1
.....	Second	4		12	3	3	3	5	1
.....	Third			1	9	3	3	3	1
.....	Fourth				4	4	4	2	2
.....	Fifth			1	1	1	1	2	1
.....	Sixth								1

11. This system, in my opinion, is admirably well calculated to stimulate the student to the greatest exertion, and is, indeed, the only reward that can be held out to superior talents for profiting by the advantages of the Academy. So long as the Academic Board is true to itself in not allowing any cadet to pass from class to class without being duly qualified, and grants no diploma but to such as it considers qualified for some one or more corps of the Army, and that its decisions are sustained by the authorities controlling the institution, I can conceive of no better mode of assigning graduates to different corps. Any change that would take from the cadet the great reward now held out to him for superiority in studies and conduct would be a serious injury to the Academy, leading to a total indifference in the attainment of any greater proficiency than that of the lowest section of the class.

12. While it is desirable to have the highest talents in each and every arm of service, it cannot be denied that some arms require qualifications not called for by others, and that some of the qualifications are common to all arms. My opinion is, that the organization of this institution for our country is decidedly superior to that of any of the military schools of Europe, from the very fact that we prepare the student for each and every arm of service; that when necessity demands he is not altogether at a loss to command under any circumstances. There must of necessity be some assignment, and this being done as at present, although not always *insuring* to any corps the individual possessing the greatest *aptitude*, combined with conduct and studies, is, notwithstanding, in my judgment, the best for the Academy as well as for the Army.

13. While the arms of service highest in academic estimation have to sustain a share of the lower order of aptitude and acquirements, by a *failure of the rule* the other corps become the gainers in having members whose career, after leaving their *alma mater*, has shown they possessed inherent qualifications to fit them for the active duties of their

profession, not to be ascertained with certainty from scholastic exercises of body or mind.

14. This change, from the condition of the student to that of the practiced officer, is a fortunate circumstance which enables the Academy to bestow its rewards on just and equitable grounds, while the several corps of the Army certainly receive into their ranks a share of the characteristics peculiarly suited for their duties.

15. It is after the student leaves here and enters upon the career of an officer that his future usefulness is developed. All are considered as having a good basis on which to build. By continued study and application *properly directed* only can we hope to render our Army more perfect in the character of its officers. That can only be done by continuing to bestow incentives to exertion. For these we may look to promotion, and appointment in the Adjutant-General's, Quartermaster's, and Subsistence Departments, upon merit, to be ascertained from official records and by examination in the *practice* of the profession of arms.

16. That there can be no difficulty in the Army in promoting by preference determined by examination is, I conceive, clearly demonstrated by the practice of the Medical Corps, and by the practice at this post of a permanent board for the examination of candidates for commissions of lieutenants from the non-commissioned officers of all arms, as well as examining cadets for the rank of lieutenant.

17. Another great stimulant to exertion on the part of the young officer after leaving the institution would be an intermediate grade of pay between that of the cadet and a lieutenant of three years' continuous service with his regiment or corps. The increase of pay should be a consequence of time *actually spent on duty* with the regiment or corps, and *qualifications ascertained by examination*, and not as now, of time, depending on death or resignation, and occasionally of favoritism. It should be the policy of the Army to let the inactive and drones lag behind, and not continue through life to have precedence over talent and superior acquirements.

A more general and comprehensive idea may be formed of the result of the system followed in assigning the graduates to the several corps of the Army by reference to the following statement of the "arms of service into which the graduates of the Military Academy were originally promoted," between 1802 and 1850, taken from Captain Cullum's compilations of the official records of the institution :

Infantry	586
Artillery	573
Corps of Engineers	89
Dragoons	82
Light Artillery	49
Ordnance Corps	30
Topographical Engineers	14
Mounted Riflemen	9
Mounted Rangers	5
Rifles	5
Marines	5
Other service	2

Total 1,449

"Question 5. Would it be, in your judgment, desirable to place the first or graduating class on a different footing, as to restrictions, priv-

ileges, military duties, and emoluments, from the rest of the corps, so that during the last year at the Academy they should be in a transition state from the warrant to the commissioned officer? State the advantages and disadvantages of such a modification, and give your views fully on each side of the proposition."

Answer. First. I am decidedly of opinion that any such attempt would not only be impracticable, but fail in securing either well-trained minds or an approach even to experts in any branch of the military profession. The great end of the Academy is to train the body and mind to think, speak, and act correctly, and in the way best calculated to suit it for the military profession. Having done so with youth, the transition to matured mind and manhood in which reliance can be placed is only to be had by an experience with the active affairs of life, calling forth all the trained talents of the college, to be used in intercourse with the more learned and intelligent, from and through whom will the developments of the individual gradually attain its proper level. It is not by any system of one or more years at any college or school that this transition state can be advantageously passed. No collegians will look upon those of a year more in age and application as their superiors. The cadet will continue to be the same character in the estimation of his companions of four years' acquaintance as long as they remain under pupilage. They cannot command respect for their opinions, either as instructors or disciplinarians, as long as they remain pupils under instruction themselves. Intrusting the student with any of the duties of the officer other than under the present system of pupilage would, I conceive, create discord and dissensions highly prejudicial to discipline and that bond of friendship and harmony, the striking characteristic of the institution, and most conducive through life in benefits to the military service. So far from encouraging such a system, I consider it the wisest policy to restrain as much as possible the exercise of superiority of one cadet over another, except under the eye of his instructor, an experienced and discreet officer of the Army. We find, from a long course of practice at the institution, that a selection has to be made for filling the positions of officers and non-commissioned officers of the battalion, and even of academic squad marchers. It is not to every member of a class that these duties can with propriety be assigned. Beyond what is now done, keeping the cadet under *pupilage as long as he is a pupil*, I do not believe in any shorter road to manhood and its responsibilities than in outside associations and buffeting the world, when the intellect and aptitude of the young man are keenly brightened, if he possess any desire whatever to excel in his profession, whatever turn it may take.

Second. I can offer no argument on the other side of a question that, in my opinion, has but the one now presented.

"Question 6. Are there any defects in the present system of discipline; if so, in what do they originate, and how should they be remedied?"

Answer 1. As a system, I consider the present one, on which the discipline of the institution is founded, to be pre-eminently wise and well calculated for training a young man possessing only the qualifications prescribed by law for admission to the Academy. It has served, since 1814, to create for the Army a body of officers that compares favorably with that of any European army. They have kept pace with the military profession in all arms, and are qualified, when called upon and the occasion offers, for the discharge, as I believe, of all the duties the nation can expect from soldiers, besides discharging many duties not belong-

ing to the defense of the country. The system has, at the same time, fulfilled its object in excluding from the Army the indolent, the ignorant, and the vicious, which, unfortunately in the nature of things, must at times exist. I consider the restraints and self-denial exacted of the young men by the system to be admirably well calculated to cultivate the only reliable basis of military discipline, to wit, method, system, and order in all things. By continued enforcement of the system for four or more years, it in most cases becomes habitual, and is introduced through life into the profession of the graduate, whatever may be his career.

2. In its details I consider it has been altered occasionally in its application for the worse. These particulars come under consideration in the answer to a succeeding interrogatory. An impartial and strict enforcement of its provisions by all the authorities connected with it, constitutes its success; any departure therefrom constitutes a defect.

3. The changes are sometimes prompted by self-interest, and a desire to gain points prompted by over-zealous and anxious desire to build up one branch without due regard to all others. It may happen that the authorities do not, in consequence, receive full information.

4. I consider it would be a wise provision of law that the code of rules and regulations for the government of the academy, prescribed by the President of the United States, shall not be changed in any of its particulars until the commencement of the succeeding academic year, after the President shall have promulgated, in orders, his alteration and amendment of such regulations. This would greatly conduce to the preservation of systematic arrangements in carrying both the prescribed discipline, as well as studies, into effect.

5. This might, with propriety, be confined to a time of peace with *civilized* nations. In time of war with such nations the welfare of the country might require sudden changes. That no injury could arise from such a provision of law may be inferred from the fact that since 1814 the published code for the government of the Academy has been revised but four times, so far as I can now ascertain.

“Question 7. Are there any changes in the regulations or administration of the Academy which would, in your opinion, conduce to the better preparation of the cadets, physically, morally, or intellectually, for the duties of officers of the Army? If so, state what they are.”

Answer. First, physically, the climate and seasons being considered, the regulations in general, in my judgment, as they now exist, best conduce to the health of body and vigor of mind of the cadet.

Drawing the line of demarkation between mental and physical duties originally, established the fundamental principle of giving the entire period of the encampment, or about one-fourth of the year, to out-door life in camp, exempt from study. This period is devoted to bodily exercises appertaining to the soldier, as an officer, non-commissioned officer, and private.

During the other nine months a portion of every week day, when the weather permits, from 4 to 6 p. m., is devoted to military exercises. This compels the student to take wholesome exercise during the study term, who otherwise might by a sedentary life injure his health. In addition to the above, and throughout the year, every Saturday afternoon is given to the free, unrestrained enjoyment of rambling through the woods and over the rocks of the surrounding mountain region, on upwards of 2,000 acres of public land.

During the winter season the climate shuts us up mostly within doors. The military exercises, from 4 to 6 p. m., are then suspended. Ice, snow, and cold render it impracticable to *give instruction* out-doors.

No other military instruction can be given than that of riding in a hall built for that purpose, and sword, bayonet, and military gymnastic exercises. At this period the hours of 4 to 6 p. m. are given to the cadets for pleasurable exercise and amusement in a gymnastic hall open to the whole corps, and of skating on the river when the ice justifies. Some portions of the corps receive exercise, under instruction, in riding and fencing with the bayonet, foil, and broad-sword, in a hall appropriated to these uses.

This system I consider well calculated to preserve the necessary healthful condition of the corps of cadets, and if persevered in will, I conceive, fully answer all that should in reason be expected.

Occasional efforts, arising from that zeal that prompts the desire of enlarging every branch of study and exercise on the part of the instructor, who is too apt to think his own acquirements, after a lifetime of study, should be the standard to which the pupil should rise, has been the means of departing somewhat from those established principles.

The fascination and charm for the horse has introduced cavalry tactics during the hours of study and instruction, between 8 a. m. and 4 p. m. Adhering strictly to the principles above referred to, and devoting the seasons and hours as stated, will, I conceive, continue to insure the health of the cadet, with all the practice in arms that should be undertaken at this institution, where the training of the mind is of paramount importance, considering the material received that has to be fitted for the Army.

It is only to preserve a just equilibrium between study, military exercise, and pleasure as a preservative to health and mental vigor that I can suggest any modification in the regulations, which would be to admit of instruction in riding between 8 a. m. and 4 p. m., but confine all squadron drill to the allotted hours of 4 to 6 p. m., and in the riding hall during the winter months, so far as practicable.

Morally.—In this respect I fear that changes have been ordered in the regulations that must in time greatly prejudice the moral character of the institution.

From the publication of the first printed Code of Regulations established by the President of the United States for the government of the Academy down to 1857 a provision existed making it the duty of "every professor, teacher, assistant professor, or academic officer, as well as every officer stationed at West Point, who is knowing to any violation of the academic rules and regulations, or to any *crime*, irregularity, neglect, or other improper conduct of which a cadet has been guilty, to report the same without delay to the Superintendent;" (see paragraph 126 of the Code of 1831; paragraph 144 of the Code of 1839; paragraph 151 of the Code of 1853;) which continued in force until the Code of 1857, when this provision was entirely abrogated without substitute of any kind.

By the existing Code the entire discipline of upwards of 250 young men falls upon the Commandant of Cadets and his four assistant instructors of tactics. Every other officer of the institution *may* now shut his eyes to violations of the regulations or other military impropriety.

It has been the policy of the governing authorities of the institution to throw open to view, and to the daily walks of the officers and professors, as much of the public grounds as practicable, that offenses might not be committed unobserved. At present there is no spot, either on the point, the village south of the post, or over the river (without leave) where the cadet may not be guilty of acts prejudicial to good order and

military discipline with impunity, unless by chance some one of the five officers of tactics should see him.

This places the tactical officer in an odious position, while the evil-doer is encouraged to repeat his irregularities. The argument I have heard used is that the effect of the previous regulation was to lessen the instructor's influence with his pupil. The answer may well be that any instructor who has not the moral courage to sustain himself in upholding virtue, and checking and upbraiding a violation of established discipline, is not worthy of having young men under his charge. At this time the argument of professional influence being lessened, applies with equal force to the five officers intrusted with the discipline of the corps, who have recently been made to attend to professorial duties in the section room, as well as other instructors; and no good reason can be assigned why its influence in their cases should differ from that of all the others who are exempt from noticing improprieties.

If violations of the regulations, or the tendency thereto, be unrestrained, fearful advancement will be the consequence, from the influence of example, among a numerous body of young men living in a building by themselves without the counteracting influences of the family circle.

I cannot believe any parent would consider the moral character of his son properly or justly cared for or attended to, with no one else to notice the faults and errors he may be led into by the force of evil example than the supervision of five officers, whose duties call them for hours to the section room, leaving the corps exempt from the observation of any individual connected with the institution.

It must be distinctly understood that no system of espionage or seeking after wrongs is, or has ever been, to my knowledge, asked of the professors and instructors. The policy of the institution has been to *prevent* improprieties *being committed*, and not to look to *punishment* of the evil-doer as the best corrective.

The highest standard of morals is to be secured by making it probable that wrong cannot be done unobserved and with impunity. "Teaching the intellect alone is insufficient to prepare man for his place in society. We must form the principles of conduct as well as the intellect, and infuse a sense of moral responsibility" based upon the precepts of Christianity.

The influence of example is so powerful that, in my judgment, the regulation referred to as existing for about forty years should be restored to the code for the government of the Academy.

There is another principle in the code of discipline not without its influence on the moral effect of the regulations.

Paragraphs 113, 117, 123, and 125 provide that a cadet shall be dismissed the service for violating their provisions. But the question arises: Who is to inflict the penalty? The Secretary of War may very justly demur and call for legal proof of criminality; but the regulations emanate from the War Department as the organ of the President. There is no other power than the Secretary's that can execute these provisions of the code. Courts-martial are bound by the articles of war, sentence according to that instrument, and are not governed by any code of regulations in awarding punishments.

Paragraphs 116, 118, and 122 are modified to obviate this difficulty.

Another class of offenses for which punishment is prescribed by the code of discipline in paragraphs 115, 116, 120, and 121, can only be inflicted by sentence of a general court-martial. Many of these offenses could with propriety be acted upon by the Superintendent under the milder authority vested in him, or by a garrison court-martial. These

inconsistencies, and even impracticabilities, may be obviated by adopting the phraseology of paragraphs 111 and 130, and subserve the effects of discipline equally as well.

Another provision in the regulations I conceive has a tendency to counteract a good moral influence. The formation and study of conduct has from the earliest period of the institution been as much a study as any other part of a cadet's duty. Deficiency in *conductor* study is ascertained and determined by the Academic Board (seventh clause of the 62d paragraph), and the consequences prescribed in the last clause of the same paragraph—paragraphs 65 and 69 place it on the same grounds as any branch of study.

During the first two years of his pupilage a cadet is being practically instructed in the course of *conduct* expected of him; this does not enter into his standing for general merit, but on returning from the usual furlough granted at the expiration of two years he then enters upon the *study of conduct* as one of the elements of merit to be rewarded when granting the diploma. Its relative value is given in paragraph 67 of the regulations, and is one-half of that assigned to either mathematics, philosophy, or engineering. It must be observed that for bad conduct a cadet may be dismissed, and for good conduct is permanently rewarded. Hence the necessity of strict justice in preserving the record in its application to every cadet. Now, one of the regulations says: "Whenever a cadet shall be tried for an offense by a court-martial, the demerit marks for such offense shall be canceled." The Superintendent seldom asks the interposition of courts-martial, and never when the regulations and discipline can be maintained without. A violation of paragraphs 111, 112, 114, 122, 129, 130, and 137 may be punished by a court-martial *or by the Superintendent*. If of that aggravated character as to call for the action of the court, the conduct *record* is *canceled*. If punished by the Superintendent, the conduct *record* is *preserved*. Thus the minor offense is made to count in awarding merit; while in the aggravated case it must be lost sight of. This may become a reward of vice, to the prejudice of virtue, and is, I conceive, immoral in its effects and tendencies, and should be changed.

In a military point of view I consider appeals to the Academic Board by cadets, against the decision of the commanding officer, authorized by the same regulation (such board being composed of his juniors, and subordinate to his command), to be inculcating a wrong principle. No commander can with propriety preside at a board of his juniors to decide upon the orders such commander may have given. The former regulations, paragraphs 286, 289, and 131, are, I consider, better calculated to uphold discipline and guard against any wrong or injustice.

Another difficulty connected with this regulation is that correction by the Superintendent for improprieties that may not be admitted by the cadet to be correct remain open to appeal until the end of the month. No punishment can, with propriety, be awarded by the Superintendent so long as this appeal can be entertained, and there is a possibility of the report not being sustained. At this time the difficulty is increased by all appeals for irregularities since the 1st of June being suspended until the end of August, when they are to be considered by the Academic Board.

Intellectually.—This branch of the seventh interrogatory will form a part of the answer to the eighth.

"Question 8. Should the course of instruction now pursued at the

Academy be enlarged in any of its departments; and if so, in which, and to what extent should it be enlarged?"

Answer. In answering this question I confine myself to the existing term of a five years' course of instruction. The existing programme underwent a scrutinizing examination by a board of which I was a member during the early part of this year. The programme drawn up by that board I consider the best for a five years' course that has as yet come to my knowledge. It omits some subjects, brings others together for the study of a class that were before taught to several classes, and divides the time systematically, according to the conceived importance of the subjects, giving to Spanish a greater portion of time than now devoted to it, and calls for more attention in practically illustrating and teaching the subjects. I annex a copy, which can be best understood by comparing it with the existing five years' course. For me to explain the whole would require more time than I apprehend the Commission would consider advantageous. Instead of enlarging, it prunes, cuts down, and reduces the whole, compared with the present course for five years, thus enabling a more thorough acquisition of what is retained.

Programme of the course of Studies at the Military Academy, as adopted by the board to revise the programme, &c., in session from January 12 to _____.

Class.	Subjects.	Hours of the day.	Periods of the year.	Number of lessons.	Number of pages.	Present programme.		Remarks of the board.
						Number of lessons.	Number of pages.	
Mathematics.	Algebra	8 to 11, daily	First term	85 .....	.....	85	400 1st sec. 265 last sec.	These subjects should be taught as at present, and each student shall have forty examples in Geometry and sixty in Trigonometry and Mensuration.
	Geometry .....	.....do	Second term .....	.....	.....	40, first sec. 65, last sec.	254 253	
	Trigonometry .....	.....do .....	.....do .....	.....	.....	21, first sec. 27, last sec.	94	
	Mensuration .....	.....do .....	.....do .....	.....	.....	2	21, 1st sec. 15, last sec.	
	Descriptive Geometry .....	.....do .....	.....do .....	.....	.....	36, first sec. 9, last sec.	106 26	
FIFTH CLASS.	English Grammar	11 to 1 and 2 to 4	First term, daily. 55	55 .....	.....	55	168	The present programme adopted the lessons in "Thesaurus" and Prefixes and Suffixes being suppressed, and the lesson in Grammar being shortened, and more practical exercises introduced.
	Declamation and Composition	11 to 1 on Saturday	First and second terms. 34 (17 each)	34 .....	.....	34 .....	.....	These subjects of Declamation and Composition alternating with each other.
	Geography	11 to 1 on Tuesdays and Thursdays	Second term .....	.....	72	23	72	Present programme adopted, and the number of lessons to be increased to embrace the whole time, and not less than twelve lessons bestowed on the continent of North America.
Fencing and Gymnastics.	French	11 to 1 and 2 to 4 on Mondays, Wednesdays, and Fridays .....	.....do .....	.....	.....	.....	.....	The present programme adopted in French, as much being taught in this year as the time will allow.
	Fencing and Gymnastics	11 to 1 and 2 to 4	First and second terms. 97	97 .....	.....	97 .....	.....	According to the present arrangement.
Military Exercises .....		.....	.....	.....	.....	.....	.....	Not acted upon by the board.

PROGRAMME—Continued.

Class.	Subjects.	Hours of the day.	Periods of the year.	Present programme.			Remarks.
				Number of lessons.	Number of pages.	Number of pages.	
FOURTH CLASS.	(Descriptive Geometry.	8 to 11, daily.	First term	11, 1st sec.	174		{ The programmes in these subjects are adopted in all their parts as now taught.
	Shades and Shadows.	do	do	25, last sec.	117		
	{ Analytical Geometry.	do	do	31, 1st sec.	130		
		do	do	28, last sec.	74		
	Calculus	do	do	56, 1st sec.	297		
	{ Surveying.	do	Second term	48, last sec.	189		{ Present programme in French adopted, as much being taught in fifth class as time will allow ; the remainder in this class.
		do	do	58	290		
		do	do	194	194		
	French	11 to 1, daily, except Saturday.	First and second terms.	17	133		
	Composition and Declamation.	11 to 1 Saturday.	do				
THIRD CLASS.	Drawing.	2 to 4, daily.	do	92			{ The first term being devoted to elementary principles and sketching from models, including the human figure. The second term devoted to landscape drawing with pencil, brush, and pen, from models and from nature.
	Fencing and Military Exercises.	4 to 5 every other day.	Nov. 1 to Mar. 15				
	{ Mechanics Hydrostatics Hydraulics Optics Acoustics Gases Heat, &c. Electricity	8 to 11, daily.	First term	80			
		do	do				
		do	do				
		do	do				
	Mechanics of Solids and Fluids (analytical) and Spherical Astronomy.	8 to 11, daily.	Second term	55			{ Instruction in these branches to be on a system and method similar to that of Ganot's "Traité Élémentaire de Physique," or Siliman's "First Principles of Physics" or Natural Philosophy. (Omitting all propositions relating to molecules, and also the several propositions noted as now omitted in the programme and text books handed to the board by the professor, with such others as may be found expedient on a more thorough examination of the details of programmes.
	Philosophy.	do	do				
	Natural and Experimental	do	do				
	do	do	do				
	do	do	do				

THIRD CLASS.—Continued.

91—3. Mis. S.

Chemistry.....	2 to 4, every other day.	First and second terms.	.....	.....	.....	Present programme adopted, and the time gained to be devoted to experiments and to shortening the lessons. Alternates with Drawing.
Drawing.....	do.	do.	92	155	.....	Twelve lessons in Architectural Drawing from models and eighty-four in Topographical Drawing with pen and brush, including sketching in the field. Alternates with Chemistry.
Composition, (English).....	11 to 1, Saturdays.	do.	34	.....	.....	Every Saturday, 11 to 1, devoted to Composition, in the Academy, from readings by the professor.
Riding.....	11 to 1, every other day	do.	92	105	.....	Instruction same as now, and to attend on the same day instruction is given in Drawing.
Military Exercises or Drills.	4 to 6.	do.	.....	.....	.....	Same as now.
Engineering.	Civil Engineering.....	First term.	72	72	.....	{ Present programme adopted, omitting, in Civil Engineering, articles 5, 6, 7, 8, 9, 42, 44, 46, and 47. Stereometry (except for the first section), Nos. 26 and 27. In Military Engineering (except for the first section), Nos. 3, 6, 7, 8, 9, and 10.
	Military Engineering.....	Second term.	57	57	.....
Mineralogy and Geology.	11 to 1, every other day.	First term, and from May 10 to 31.	52	22	.....	Present programme adopted.
Tactics. } Tactics of Infantry. } } Artillery, and Cavalry. } Veterinary Art.....	2 to 4, every other day.	Sept. 1 to May 10.	84 days.	62	{ 630..... 538..... 128.....	
Ordnance and Gunnery.	11 to 1, every other day.	Second term	58 days.	58 days.	.....
Riding.....	2 to 4, every other day.	First and second terms.	92	105	.....
Military Exercises (drills)	4 to 6, daily.	do.	.....	.....	.....

SECOND CLASS.

Class.	Subject.	Hours of the day.	Periods of the year.	Number of lessons.	Number of pages.	Present programme.		Remarks of the board.
						Number of lessons.	Number of pages.	
FIRST CLASS.	Law, &c. { <div> Moral Science..... <div> Constitutional and International Law..... Military Law..... History..... </div> </div>	8 to 11, a. m., daily, from Nov. 1 to Jan. 1, and every other day from January to June.	From Nov. 1 to May 31.	{ 10..... 22..... 20..... { 60..... 22..... 23..... 69 to whole corps..... 185.....	
	Spanish.....	2 to 4, daily.....	First and second terms.....	218.....	.....	.....	.....
	Science of war.....	8 to 11, every other day.....	Second term.....	60.....	.....	.....	.....
	Practical Engineering.....	.....	.....	.....	.....	.....	.....
	Practical Astronomy.....	8 to 1.....	September and October.....	.....	.....	.....	.....
	Geodesy.....	
	Instruction in Small Arms ..	11 to 12, every other day.....	From Nov. 1 to May 31.....	

Practical instruction in this class shall be given as officers and instructors, by regular details for the infantry, cavalry, and artillery drills, such that every member of the class shall have the same opportunity of instruction.

JAMES B. FRY,
First Lieut. 1st Artillery, Recorder.

“Question 9. Is sufficient time allowed the cadets to become proficient in the course of study, theoretical as well as practical, laid down in the programme of instruction? If too much time is allowed to what extent should it be curtailed; if too little, how much should it be extended, and what modifications would be introduced by the proposed reductions or extensions?”

Answer. The existing five years' programme of studies is burdened with so great a variety of subjects that time cannot be allotted to each to admit of the systematic arrangement of studies, such that the cadet can attend to them in succession, as he is necessarily called upon to recite. During the past term the subjects of ordnance and gunnery and those of the chemical department were embarrassed in this way, the latter to such a degree as to call forth a request from half the class that it might alternate in time of recitation to put them on an equal footing, as time for preparation.

Some members of the respective classes possessing great aptitude can acquire, in the time now allotted, the studies of the five-years' course, but as a general rule I do not consider them thoroughly grounded, or that they acquire such a knowledge of the programmes of the many subjects taught as to make a useful application of them beyond the training and exercise that the study gives to the mind, and to this extent it is of great importance. Upper sections of the class do acquire such a thorough knowledge as to be enabled, under capable commanders, on leaving here to make a good use of the sciences taught them, while others have such a foundation as to be enabled to persevere in study and make their talents useful.

The evidence of this want of thorough preparation and comprehensive knowledge in many of the sections of the several classes is perceptible on an examination of the weekly class reports of the professors to the Superintendent, giving the daily recitation of every cadet. Next, that the lower sections in mathematics in both the five and four years' programmes have time to acquire *only one-half* of what is taught the upper sections. Next, in a similar state of things in the philosophical department, and which I cannot better express than in the language of the professor of that branch in his statement to the late board, before referred to, to wit: That “each text contains an appendix, in which is wrought out the more difficult results of analysis; results which the student *must know* in order to complete the sequence of his subject. But the labor of the analysis forms *no part* of his task. With the exception of a few propositions, the *higher sections* are required to perform the analysis in the body of each text, while the *lower sections* are relieved from a very large portion of it, indeed *all the more difficult*; pains have been taken to translate every mathematical result of importance into common language, so that a student who is *willing to take for granted* what he has not the analytical power to demonstrate, may read the work understandingly.” (?) “The course requires much time for study and reflection. To the beginner, it presents ideas at variance with, oftentimes opposed to, his previous popular notions, and discusses phenomena of which the *rationale* is *difficult of comprehension*. By *extraordinary exertions* young men *may*, by what is called the process of ‘stuffing,’ acquire enough of a subject to pass a *respectable examination*, and yet derive *neither profit nor lasting improvement from its study*, and this is one of the evils of the present times. Young men are driven as it were over extensive fields, at a rate which leaves them no sufficient time to get beneath the surface, and the aims of education are thus defeated. Nor is the Academy free from this reproach. I have often had occasion to

wonder how pupils of my own classes had gotten through their mathematics, and yet was able to recall that the examination of these same pupils had previously *satisfied* me of their *entire proficiency*. This being true of mathematics, one of the best and thorough courses of the institution, it is doubtless so of others, and no doubt so of my own." This statement of the professor, in addition to the weekly class reports of his sections, is evidence that the cadet does not become proficient in the third year's course of study. That it is so in the fourth and fifth year (first and second classes) is shown by the corresponding fact that but the upper sections can comprehend parts of the course taught by the professor of engineering, the first section only attempting the programme of applied mechanics, and, as must be admitted, because they are not proficient in the fifth, fourth, and third years' courses to a useful degree. Now, it is not a question of how much time will secure this end. The aptitude does not exist in the generality of minds to justify this effort of teaching any one branch of science exclusively by the analytical method of demonstration. It is considered a grave error even in the French schools of application, and to be best corrected, as I believe, by adopting the views of the board, heretofore referred to, on the subjects of natural philosophy and civil engineering, in the programme prepared by it.

As a further evidence that the existing five-years' course does not render the cadets proficient to the extent that was anticipated, is the fact that under it a *less* percentage of cadets have graduated than under the preceding or four-years' course. During the years 1857, 1858, and 1859, less than half the class attained a proficiency to receive a diploma, and this year but one more than half, while in 1851, 1852, 1853, 1854, and 1855, more than half graduated. Since 1855, the initiatory examination has rejected eighty-five candidates, when during the preceding five years only nineteen were rejected. The only just inference is, that the remaining material in the classes from 1855 to the present date was much better from being more thoroughly sifted, and yet, with the advantages supposed to exist in prolonging the term a year, we do not succeed in qualifying as many for diplomas.

Taking the course of instruction as it exists, nothing appears to have been gained in proficiency; indeed, with this increase of a year, we should have done better, but failed to do so, notwithstanding the courses of mathematics and philosophy have remained much the same.

The modifications I would introduce are given in the programme for a FIVE-YEARS' course, if that be determined to be most expedient, or in the programme for *four years* annexed, in which the modifications in the philosophical and engineering courses noted in the five years' programme are to be followed.

The total number of cadets who graduated previous to increasing the programme of studies to *five years* is 1,776, 734 of whom had, up to 1850, filled distinguished positions, or held official stations in civil life—the fruits of a programme of instruction not exceeding four years' duration of study.

Proposed programme of the course for four years instead of present five years' course.

Year.	Class.	Studies.	TIME.		Remarks.
			A. M.	P. M.	
First	Fourth	Mathematics	8 to 11	.....	Daily.
		English grammar, including etymological and rhetorical exercises, composition, declamation, and practical ethics.	11 to 1 or	2 to 4	Daily before January; every other week day after January examination, alternating with French; afternoons of Saturdays excepted.
		French	11 to 1 or	2 to 4	Every other week day after January examination, alternating with English studies.
		Fencing	11 to 1 or	4 to 6	Every other week day whole term.
Second	Third	Mathematics	8 to 11	.....	Daily.
		French	11 to	1	Daily.
		Drawing } alternating	.....	2 to 4	Five days in two weeks, Saturdays excepted. Riding to be from 4 to 6 p m., when the out-door drills cease, giving more time to drawing.
		Riding ..	.....	2 to 4	
Third	Second	Natural and experimental philosophy	8 to 11	.....	{ Daily; the ordnance and gunnery, after finishing Bartlett's Mechanics, and after chemistry, which latter to be as in second class, as far as practicable, to give time for ordnance and gunnery; philosophy as recommended in the five-year programme. Every other week day, alternating with riding. Every other week day except Saturday. Every other week day except Saturday, from February 1 to March 15, alternating with drawing. Every other week day except Saturday, from March 15 to April 10, alternating with drawing. Every other week day, alternating with chemistry; to be from 4 to 6 p. m., when out-door drills cease. During the encampment, as well as during the time the theory is being taught.
		Ordnance and gunnery	8 to 11	.....
		Chemistry	11 to	1	
		Drawing	.....	2 to 4	
		Infantry tactics	.....	2 to 4	
		Artillery tactics	.....	2 to 4	
		Riding	11 to	1	
Fourth	First	Practical astronomy	.....	.....	Daily. Every other week day, Saturday excepted, alternating as below with mineralogy, &c., ordnance and gunnery, and cavalry tactics. Every other week day, Saturday excepted, from 1st of September to second week in December, and three weeks before June, alternating with ethics, &c. From second week in December till April 1, alternating with ethics, &c.; five days in two weeks.
		Engineering (military and civil)	8 to 11	.....
		Ethics, constitutional and international law	.....	2 to 4	
		Mineralogy and geology	.....	2 to 4	
		Spanish, in addition to the time given below	.....	2 to 4	

Proposed programme of the course of studies for four years instead of present five years' course—Continued.

Year.	Class.	Studies.	TIME.		Remarks.
			A. M.	P. M.	
		Riding		4 to 6	Daily, except Saturday, from 1st November to 1st of April, as in second and third classes, and at such other times during the academic term as the weather shall prevent other military exercises. From April 1 to second week in May, alternating with ethics; five days in two weeks, and, in addition, the time above now gained by transferring ordnance, &c., to second class. Every other week day. Practical instruction during a part of the encampment, and a part of the time after 4 p. m., from the 15th March to the 15th May. During the encampment, topographical and landscape sketching, and geodesy, as well as during the time of teaching the theory.
		Cavalry tactics		2 to 4	
		Spanish	11 to	1	
		Practical engineering			
		Topography, with some geodesy.			

This four years' programme (with a slight modification increasing the Spanish course, changing the system of instruction in philosophy, and transferring ordnance and gunnery to the third class) was matured by the Academic Board in 1858. On the 30th of August of that year the professor of philosophy (Bartlett) offered to the board a resolution to the effect that "the Academic Board having carefully considered the letter of the Secretary of War, dated August 19, and of the chief engineer, dated August 23, and in view of the experience of the board in reference to the matter therein submitted for their action, are of opinion that the best interests of the Academy will be promoted by a return to a four years' course. The professor of chemistry (Kendrick) moved that this resolution be referred to a committee of three for consideration. If the committee be in favor of the resolution it will prepare a programme for a *four years' course*. If approved it will report the reasons in full. Also, that the letters of the Secretary of War and of the chief engineer be referred to said committee." Which motion *was unanimously adopted*.

On the 4th of September, 1858, "the committee appointed under the resolution of the 30th of August, 1858, submitted the following as the conclusions to which they arrived after careful consideration of the subjects committed to them: 1. The committee recommend the substitution of a course of studies for *four years* in place of the present course of *five years*. 2. The committee submit for consideration and recommend the adoption of the annexed programme of studies, &c., for the course of *four years*."

"On the 7th of September, 1858, after reading the foregoing report, the Commandant of cadets (Lieutenant Colonel Hardee) moved that the ayes and noes be taken upon the question of adopting the resolution presented by the professor of philosophy (Bartlett) on the 30th ultimo, recommending a return to a four years' course, which was agreed to. When the vote on the resolution was taken, and stood in favor of it, (ayes) 8, against it (noes) 2. The professors of drawing (Weir) and of ethics (French) voting in the negative."

"The programme presented by the majority of the committee for a *four years' course* was then discussed, *amended, and unanimously adopted*. The report of the majority of the committee was then *unanimously adopted* as the sense of the Academic Board. The professor of mathematics (Church) moved to reconsider this vote, which was unanimously agreed to. The professor of engineering (Mahan) then moved to amend the majority report of the committee by striking out the last three lines on page beginning 'in closing their report,' &c., and the first eight lines on page ending with the words 'sojourn of the cadet at the Academy,' and substituting the following, viz: 'In closing their report the committee deem it an act of justice to those of the present members of the Academic Board who concurred in the views repeatedly urged by boards of visitors * * * respecting certain deficiencies in the requirements of many of the individuals admitted into the Academy, and recommended as a means of supplying them, a resort to a course of studies of *five years*, to state their action was partly based upon deference to opinions emanating from such high authority and partly upon the hope that an acknowledged want might be supplied. * * * The trial of this plan (five years' course), as far as it has been carried into effect, has satisfied these members, and others of their colleagues, that the benefits hoped for from it have not been realized, and that detrimental consequences of a graver character have resulted from it than they had been led to anticipate. They therefore feel bound to declare their convictions that to persevere further in this experiment would not only aggravate these

consequences, but prove destructive to that feature of *sound and thorough* instruction which has been the peculiar boast of the Academy, and has secured for it whatever favor it has met with from the country." * * * *

"This elimination and substitution in the majority report of the committee *was unanimously agreed to.*

"The professor of philosophy (Bartlett) then offered the following resolution, viz: *Resolved*, That the amended report of the committee appointed under the resolution of the Academic Board of the 30th ultimo be adopted as the sense of the Academic Board. Which was adopted—ayes 9, noes 1. (The professor of ethics voting in the negative.)"

Such was the action of the Academic Board in favor of the *four years'* programme now presented, with the modifications of the Superintendent before referred to.

9. (Continued.) "Should it be reduced in any of its departments; and, if so, in which, and to what extent? Should any subjects not taught be introduced; and, if so, what are they, and to what extent should they be pursued? Should practical training in any of the departments be extended; and, if so, in which, and to what extent?"

The answer to the previous part of this question embodies the reduction I would propose in parts of the existing five years' course in detail. No new subject is, nor do I think should be, introduced. Practical training should be *perfected* within the limits of *time allotted* by the programmes just referred to.

"Question 10. What modifications, if any, are desirable in the mode of instruction pursued in the different departments?"

In the department of philosophy I have already referred to a material change in the mode of imparting a knowledge naturally and experimentally, as required by law, whereby every student may acquire a comprehensive knowledge of every branch; all the facts being demonstrated, so far as the eye and a lecture, with suitable apparatus, in connection with a text, can make the subject understood. This suffices for most arms of service. Yet there are subjects that cannot be treated experimentally and geometrically, calling for analytical investigation, particularly useful to some corps of the Army. To attain this end, and at the same time cultivate the higher analytical investigation, Bartlett's *Mechanics and Astronomy*, or other texts treating these subjects analytically, should be studied by as many members of the class as may be found qualified therefor after completing the previous course. It is time thrown away to attempt to teach the *whole class* by the abstract system of analysis, while time may be gained and better devoted to ordnance and gunnery the same year, by suppressing Bartlett's *Analytical Optics and Acoustics*, which, whenever required by the officer, can be mastered with little study by the talent that must necessarily exist in the mind of any officer who may be called upon to apply these subjects.

In the mode of instruction in composition I would recommend that pointed out in the programme of the Board heretofore referred to, as far preferable to the one now practiced; which latter cannot be satisfactorily carried out.

Under the existing regulations *professors* claim that in no case, and by no arrangement of subdivision of classes into sections, can they be required to instruct personally any one section, and that their duties are only supervisory, with partial instruction disseminated throughout the class.

Although the forty-second paragraph requires the professor to instruct all the sections, it is contended, and has been ordered to read as supervisory or general instruction, and not particular instruction to the best students (whose talents may call for the highest professorial ability), combined with general or supervisory instruction of the others.

The forty-fifth paragraph says that every professor having *immediate charge* of *one or more* sections of a class, &c. Notwithstanding these provisions the interpretation has been ordered, at the instance of some of the professors, that their duty is general and supervisory, and that no one of them can be called upon to take immediate charge of the highest section, and conduct it to its highest limits of attainment, but that such superior intellect must be assigned to his assistant, and, as a consequence, to one who cannot, in the nature of things, be equally qualified.

One of the inconveniences of such an interpretation and application of the regulation is to make more assistants necessary from the Army; another is exemplified by the fact that during the academic year this subject was being examined by the Superintendent, there were no less than *eight hundred and eighty-two days* of leaves of absence by members of the academic staff, no one of which was granted until the chief of the department had said he could dispense with the service for the period of absence requested. In these 882 days are not included leaves for less than twenty-four hours, which would add materially to the number. The usual leave of two months and a half to the members of the Academic Board during the encampment is also an additional period of relaxation.

A reference to the Code of 1831, paragraphs 50, 53, and 55, and to the Code of 1839, paragraphs 45, 48, 51, and 52, which continued in force to March, 1853, will show the long-continued policy of requiring the professor to instruct the highest talent, and give his personal supervision to the others. In the Code of 1853 the duties of instruction by the professors was first changed, requiring the *assistant* professors and instructors to teach the sections, which sections shall be subject to the daily examination of the professor. (Paragraph 45.) Finally, in the Code of 1857, the one now in force, the regulations were modified as cited. (See paragraphs 41 and 45.) Yet the practice of 1853 to 1857 has been restored at the instance of some of the professors.

I can but believe that the best interests of the institution require that every professor shall be the daily instructor of the highest talents of the class or first section, and give his supervisory and occasional instruction to every other section, as was done from 1814 to 1853, and to which system several of the present professors owe their standing.

“Question 11. What modifications, if any, are desirable in the order of time in which instruction in the different departments is given, and in the subjects taught in these departments?”

Answer. The programmes for both a four and a five years' course, heretofore referred to and annexed, give all the details of these arrangements, in the order in which the several subjects should succeed each other, the one being preparatory to the other. Natural philosophy and chemistry must necessarily come before ordnance and gunnery. Sulphur, niter, charcoal, and all the material used in the laboratory, must have been taught by the chemist before the student commences ordnance and gunnery. In like manner, chemistry, mineralogy, and geology must come before civil and military engineering, that the student may understand the subject of mortars, hydraulic cements, stone, iron,

and other building material—natural philosophy being an indispensable acquisition before all these, except the chemical course, which may be studied at the same time.

In the department of drawing: Landscape drawing, being based upon an application of descriptive geometry, must necessarily be taught after that branch, while topographical drawing, being based upon simple horizontal projections and surveying, should follow these latter two subjects. Landscape drawing from nature, whether out doors or in the studio, is, in my judgment, one of the best studies to cultivate a close, discriminating *coup d'œil* and accuracy of details that can be attended to. Topographical drawing is, like writing, a knowledge and skill in making arbitrary characteristic signs and symbols, while landscape is a close study and delineation of nature and the realities, as we see things in perspective, and must be learned after the student has gained a knowledge of the application of descriptive geometry.

In like manner, practical astronomy must succeed its theory in the philosophical course, and its practice may very advantageously be introduced during its study, as well as during the encampment, when the season is most favorable.

Practical engineering, in part, may precede the theory—the making of gabions, fascines, and the like, being applicable to artillery as well as engineering. Tracing of field works, &c., in miniature, on the ground must succeed the theory of field fortification.

All these details have been considered in the programmes for four and five years, except that of drawing, in which the undersigned finds himself differing with his colleagues on the precedence of topographical and landscape drawing—the result of more consideration since that programme was devised.

“Question 12. How many hours daily are apportioned to the cadets of each class during the different seasons of the year—1, for study in each branch; 2, for recitation in the section room in each branch; 3, for practical application; 4, for military exercises; 5, for meals?”

Answer. In answer to these questions, I annex—

First. A tabular statement showing the occupation from morning to night of a cadet of each class.

Second. A table showing the branches studied by each class, and the hours devoted to each in the section room and practical application.

Third. A statement of time, estimated by the several professors and instructors to be necessary for acquiring the daily lessons in their respective departments.

Tabular statement showing the occupation of time, daily, of a cadet of each class, as averaged for three periods.

	First class.	Second class.	Third class.	Fourth class.	Fifth class.
Study.....					
Recitation in section rooms and practical application.....					
Military exercises.....					
Meals.....					
	H. M.	H. M.	H. M.	H. M.	H. M.
	From 1st September to 31st October.	From 1st September to 31st October.	From 1st September to 31st October.	From 1st September to 31st October.	From 1st September to 31st October.
	Second period.	Second period.	Second period.	Second period.	Second period.
	From 1st November to 15th March.	From 1st November to 15th March.	From 1st November to 15th March.	From 1st November to 15th March.	From 1st November to 15th March.
	Third period.	Third period.	Third period.	Third period.	Third period.
	From 15th March to 1st June.	From 15th March to 1st June.	From 15th March to 1st June.	From 15th March to 1st June.	From 15th March to 1st June.
	H. M.	H. M.	H. M.	H. M.	H. M.
	7. 00	7. 50	6. 40	6. 40	7. 10
	2. 50	2. 20	2. 50	2. 50	2. 30
	2. 15	0. 45	3. 40	2. 50	2. 30
	1. 30	1. 30	1. 30	2. 15	2. 05
				1. 30	1. 30
				7. 00	7. 30
				7. 20	7. 50
				6. 40	7. 10

Table showing the branches studied by each class, and the number of hours devoted to each in the section room and practical application.

Branches.	Number of hours in section room.	Attendance.	From and to what periods studied.
FIRST CLASS.			
Engineering (Military and Civil)	1. 30	Daily	From 1st September to 1st June.
Law, &c.	1	Every other day	From 1st September to 1st June.
Mineralogy and Geology	1	do	From 1st September to end of second week in December, and last three weeks of May, for review.
Ordnance and Gunnery	1	do	From 1st October till end of first week in December, and from 1st January to 1st April.
Practical Engineering	1	do	From 1st April to 31st May.
Riding	1	do	From 1st September to 1st June, excepting from 1st October to end of second week in November, and last three weeks in May.
SECOND CLASS.			
Ethics, Literature, Logic, &c.	1. 30	Every other day	} From 1st September to 1st June.
Tactics of Infantry, &c.	1. 30	do	
Tactics of Artillery, &c.	1. 30	do	
Tactics of Cavalry and Veterinary Art.	1. 30	do	
Electricity and Chemistry	1	do	
Drawing	2	Daily, except Saturday	} From 1st September to 1st June.
Cavalry exercise	1	Every other day	
THIRD CLASS.			
Natural and Experimental Philosophy	1. 30	Daily	From 1st September to 1st June.
French	1	Every other day	From 1st September to January examination.
Spanish	1	do	From 1st September to January examination.
Drawing	2	Daily	From 15th January to 1st June.
Cavalry exercise	1	Every other day	From 1st September to 1st June.
FOURTH CLASS.			
Mathematics	1. 30	Daily	} From 1st September to 1st June.
Rhetoric and History	1	Every other day	
French	1	Daily	
Fencing and Bayonet exercise	0. 30	Every other day	
FIFTH CLASS.			
Mathematics	1. 30	Daily	} From 1st September to 1st June.
Literature, History, Geography, and Ethics	1	do	
Fencing and Bayonet exercise	1	Every other day, except Saturday	

Tabular statement of time estimated by professors and instructors as necessary for a cadet to study properly each lesson.

Branches.	No. of hours.	In quarters.	From and to what periods studied.
FIRST CLASS.			
Civil and Military Engineering.....	4	Daily	September 1 to June 1.
Mineralogy and Geology..	2	Every other day	September 1 to end of second week in December, and last three weeks of May, for review.
Law and Literature.....	0.30	.....do.....	September 1 to June 1.
Ordnance and Gunnery....	2.30	.....do.....	October 1 to end of first week in December, and from January 15 to April 1.
SECOND CLASS.			
Ethics, Literature, Logic, &c	2.30	Every other day	September 1 to June 1.
Tactics of Infantry, &c.....	3	.....do.....	Do. do.
Tactics of Artillery, &c....	3	.....do.....	Do. do.
Tactics of Cavalry and Veterinary Art.....	2	.....do.....	Do. do.
Electrics and Chemistry...	2.30	.....do.....	Do. do.
THIRD CLASS.			
Natural and Experimental Philosophy.....	4	Daily	September 1 to June 1.
French.....	2	Every other day	September 1 to December 31.
Spanish.....	1.30	.....do.....	Do. do.
Spanish.....	1.30	Daily.....	January 15 to June 1.
FOURTH CLASS.			
Mathematics.....	3.45	Daily	September 1 to June 1.
Rhetoric and History.....	0.30	Every other day	Do. do.
French.....	2	Daily	Do. do.
FIFTH CLASS.			
Mathematics.....	3	Daily	September 1 to June 1.
Literature, History, Geography, and Ethics.....	2	.....do.....	Do. do.

EXAMPLE.

	<i>h. m.</i>	<i>h. m.</i>
A member of the <i>first class</i> has for study.....	7 0	
And in section room.....	2 50	9 50
He must devote to the section room.....	2 50	
And in quarters for study, as called for by professors.....	6 0	8 50
Leaving for correspondence, newspapers, and inattention		1 0
A member of the <i>second class</i> has for study	6 10	
And in section room.....	3 40	9 50
He must devote to the section room	3 40	
And in quarters for study, as called for by professors.....	5 30	9 10
Leaving for correspondence, newspapers, &c		40
A member of the <i>third class</i> has for study	6 30	
And in section room.....	3 30	10 0
He must devote to the section room.....	3 30	
And in quarters for study, as called for by professors.....	7 30	11 0
Or he must devote <i>one hour</i> more time than he is allowed for the latter duty.....		
A member of the <i>fourth class</i> has for study.....	7 0	
And in section room.....	2 50	9 50
He must devote to the section room.....	2 50	
And in quarters for study, as called for by professors	6 0	8 50
Leaving for correspondence, newspapers, &c.....		1 0

	<i>h. m.</i>	<i>h. m.</i>
A member of the <i>fifth class</i> has for study.....	7 30	
And in section room.....	2 30	
	<hr/>	10 0
He must devote to the section room.....	2 30	
And in quarters for study, as called for by professors.....	5 0	
	<hr/>	7 30
Leaving for correspondence, newspapers, &c.....		2 30

"Question 13. Is there any indication of overwork or weariness of study among the cadets, in the section rooms or examination halls?"

Answer. In the section rooms I have had no opportunity of noticing any effect, one way or the other—not frequenting them sufficiently to form any judgment on the subject. In the examination halls, and on Sundays in the chapel, when I have an opportunity of seeing the fifth and first classes in the one case, and many individuals of other classes in the other, I notice, towards the close of an academic term, a pallid and careworn expression, indicative of great mental application. In the examination hall it is very apparent; and equally striking is the rapid change in the robust appearance of the graduates on returning to the Academy after a few months' absence.

"Question 14. Have you any modifications or changes to suggest not embraced in your answers to the foregoing questions respecting the organization, discipline, and course of instruction that would, in your opinion, conduce to the better accomplishment of the objects of the establishment of the United States Military Academy?"

Answer. The departments of Spanish, and history, geography, and ethics require some modification to establish them on the advantageous footing of the other permanent professorships. Spanish is dependent at present upon the professor's ability, with such assistance as he can draw from the Army, in which there is but little knowledge of that language, and of that which does exist not available for instruction at the institution. An assistant professor should be authorized by law in such way that he may be taken from the Army as all other assistants, or from civil life. Such was the system under which we have been enabled to build up the department of French, to have arrived at such proficiency that no difficulty exists in finding in the Army all the assistants needed for its interests at this institution. More time should then be given to the subject. In the department of ethics the burden of many subjects, in no way appertaining to the clerical profession, are thrown upon it. An enumeration of the subject will suffice to show that no gentleman whose standing as a clergyman should be expected to prepare courses of study adapted to our wants in relation to them; they consist of Kent's Commentaries, De Hart on Courts-Martial, Rules and Articles of War, Weber's Outline of Universal History, Declamation and Composition, Whately's Logic, Wayland's Elements of Moral Science, Tennemann's History of Philosophy, Sargent's Elocution, Blair's Rhetoric, Parker's Aids to English Composition, Morse's Geography, Butlion's Grammar, French's Vocabularies, Roget's Thesaurus of English Words, French's Practical Ethics, French's Prefixes and Suffixes.

The remedy may be found—first, in reducing the number of subjects, and as indicated in the four and five year outlines of study presented with this communication; and next, in giving to this department an additional assistant professor (by law), who shall be charged, in connection with the present assistant, with subdivisions of the subjects, to remain under the permanent supervision of the chaplain, whose specialty should be moral science and language. I must not omit to state that programmes of courses of study, such as I now present, can only be perfected to work without interference by the aid and assistance of some of the members of the Academic Board.

Second series.

"Interrogatory No. 1. What modifications, if any, of the present mode of assigning cadets of the United States Military Academy to corps or arms would, in your opinion, be better adapted to the purpose of securing to each branch of the service the highest special qualifications, and to the Army the greatest efficiency?"

Answer. This question I have fully answered, as I believe, and to the effect that no better mode than the present can be desired for assigning cadets to corps or arms; but after having been assigned suggestions are presented connected with their future efficiency.

"Interrogatory No. 2. To what extent, if at all, would it be advisable, in your opinion, to require officers to serve in different corps or arms?"

Answer. My impression is that officers of all the corps, usually denominated staff corps, would be greatly benefited and enabled to discharge their respective duties by serving with different arms. For example: An engineer officer can design and construct barracks and all their appendages after being in a garrison and witnessing the wants of the individual much better than without such experience. In like manner he can construct a casemate, a gallery for infantry fire, or a drawbridge, much better after witnessing the practice of artillery in the former, and use by the troops of the latter, than without such observation. The ordnance officer can, after witnessing the use of the gun carriage in casemates, in barbette, and in siege, mortar, and field batteries, understand much better the existing defects and necessary remedies than without such opportunities; so in relation to the designing and fabricating all the harness for siege and field batteries, and the entire cavalry equipment. I consider that service for a limited period, with troops in use of such equipment, would materially tend to the improvement of all the details and fitness of the entire armament.

The topographical engineers serving with troops in the field would contribute greatly to his ability in procuring and sketching the information indispensable for a command of a moving column of troops or supplies, and military localities. A record of the topography of any route passed over by the troops, in small as well as large bodies, filed where it could be accessible to the commanders of posts, quartermasters, adjutants-general, and inspectors general, would materially assist in training the graduate of the academy to duties that are indispensable to the military service. The quartermasters and commissaries can best, as I think, perform their duties by having served with troops of infantry, cavalry, and artillery in the field and garrison. The officers of the Adjutant-General's Department, as well as the inspectors-general, in like manner can best understand the wants of the troops, and be enabled to draw up the detailed instructions for their movement, after serving with the different arms. In short, it is the troops in garrison and in the field for whom all the corps, usually denominated staff corps, are constantly laboring to render efficient. Without having experience of their habits, customs, the face of the country, and various circumstances in which their services are called into action, the members of these staff corps must act without experience as a guide. Next to being stationed and serving with troops, duties of inspection contribute most to the improvement of the officer.

No. 3. "Do the graduates of the United States Military Academy, so far as you know or believe, generally pursue their professional studies after entering their respective corps; and can you suggest a method

which would, in your opinion, further stimulate to useful emulation and professional improvement among the junior officers ? ”

Answer. Of the officers of my own corps, the topographical corps, and the ordnance corps, I have personal knowledge of continued study, and accumulation of professional knowledge in their respective arms ; and in like manner I have such a knowledge, confined more, however, to individuals of the artillery, infantry, and cavalry, arising from not being thrown so much on duty with them. For the officers of the corps of engineers, topographical engineers, and artillery, collectively, I have imported numerous professional books from Europe, and frequent application is being made to me by officers of different corps for information obtainable at this post. The means of making professional study general, by rewards and preferment, have been referred to in a previous part of this communication.

All of which is respectfully submitted.

RICHARD DELAFIELD,
Colonel of Engineers, Sup't Military Academy.

WEST POINT, August 13, 1860.

V.

WEST POINT, August 13, 1860.

SIR : I have the honor to present the following replies to the list of questions submitted through you. I regret that my answer has been delayed by sickness and sorrow, as well as by desire both to deliberate on measures recommended and to condense what was becoming too voluminous.

Very respectfully, your obedient servant,

J. W. FRENCH,
Professor of Ethics, &c., U. S. M. A.

Lient. J. C. IVES,
Secretary U. S. M. A. Commission.

1. The subjects are in three divisions. The first is occupied with *language*, the second with *facts*, the third with *principles of right*. In the first division are GRAMMAR, LOGIC, and RHETORIC ; in the second, GEOGRAPHY and HISTORY ; in the third, ETHICS and LAW.

In stating the amount of instruction I beg permission to anticipate, and so simplify, some portions of the answers to subsequent questions.

GRAMMAR occupies the whole of the first term of the fifth class ; it has fifty-five lessons.

Etymology precedes. Of its two divisions—that which regards words apart from the sentence has twenty-three lessons. Words are studied in their derivation, their form, their sense. The process by which derivatives are drawn from radicals by the addition of prefixes and suffixes is shown in selected specimens. The laws for the derivation and composition of English words are thus learned : The understanding of the process is simplified by a tabular arrangement devised by the professor and communicated orally. The pupil thus learns how to define words etymologically. He is then left to apply the process for himself to the other words of the language. For this purpose there is left in his hands

a vocabulary of English words arranged according to their derivations. This process and the vocabulary are essentially needed by those who have not studied Latin and Greek. The knowledge thus acquired from derivation is applied to show the principles of spelling and pronunciation. To illustrate these principles by examples the learner has a second vocabulary of words arranged according to terminations. This at present is limited. The same knowledge drawn from derivation is then applied to the process of composition in a simple sentence. The subject is given, and the predicate with synonyms for each. He thus learns the structure of the sentence and the various verbal forms in which one proposition may be expressed. The process having been exhibited in a few selected examples, the learner is left to apply it through his course by means of a third vocabulary of words arranged according to their significations. The whole of this part is taught mainly by practice in written examples, the principles being few and simple. These latter, in the present condition of the text-books, are for the larger portion given orally.

The ordinary difficulties found by the mature learner in school grammars are now removed. The practice which has taught him how to frame the sentence skillfully for composition has brought him to the basis of grammatical theory—the sentence. Prepared to follow the meaning through all verbal substitutions he can avoid the hinderances to intelligent parsing. Accordingly, he passes on to syntactical etymology, syntax, and prosody. These have thirty-two lessons.

This whole course in the first term is the study of the English language as preparatory to composition, to rhetoric, and logic, to the acquisition of French and Spanish, and to correct expression generally in the exercises of this and of all the departments.

To promote this correctness a copy of the standard dictionary is on every instructor's desk and in every pupil's room. Constant reference to the standard in every case of doubt is demanded.

LOGIC includes the subdivisions of terms, propositions, syllogisms, and method. The latter teaches how to investigate and arrange subjects. Logic has sixteen lessons. From a text-book of Whately's, the essential statements under these subdivisions are selected; the rest of the instruction is supplied by the professor.

This subject is now taught to the second class before they enter on the course of moral and probable reasoning required by ethics and law.

RHETORIC includes two portions. These are, rhetoric proper and literature. It occupies the fourth class—the first portion in the first, and the second in the second term of that class. The text-book is that of Blair. The chapters on language are omitted, as the subject has been included under grammar. A few other eliminations being made, the remainder is taken in a series of short lessons. As the matter cannot fill the hour of recitation, the pupils read aloud for a part of the time, and the instructor corrects. The reason for such light lessons in an easy subject is that the class have two other studies. The principal purpose is not to tax the attention, but to cultivate the taste. This is to be attained by good models and good rules. The recitations being thrice in the week, there are twenty-five lessons in the first and thirty in the second term.

The applications of rhetoric to military composition are presented in lectures by the professor to the first class in its second term, just before its members graduate.

These subjects embrace the studies which are based on language.

GEOGRAPHY is studied by the fifth class in its second term. It has

fifteen lessons. The text-book is that of Morse, the same which is used in the elementary schools of the country.

An improvement would be made by substituting the outlines of physical for unimportant details in political geography.

HISTORY, divided into portions, according to the matter included, is studied by different classes. So far as is practicable, these different divisions of history are adapted to the different stages of the pupil's course, and to the studies with which he comes in contact. Universal history is begun by the fifth class, in its second term, in twenty-two lessons, and, in another division, continued by the second class, in its first term, in eighteen lessons. The history of *philosophy*, designed to show the course and the laws of scientific discoveries, is taken, also, by the second class after completing their course in "natural and experimental philosophy," and just before entering on the course in ethics and law, wherein the results of dominant theories and systems will be apparent. It has seventeen lessons. *American history* is read by the first class, in its first term, as introductory to the study of American law; and *military history*, by the same class, in its second term, as introductory to military law. The two have thirteen lessons.

History was formerly assigned to one class. It was found to interfere, in that position, with the scientific departments. The present arrangement followed. It was sought to turn a difficulty into advantage.

The text-book at present for all the history, except the scientific, is that of Weber. In its use, those parts are eliminated which pertain to philosophy, because they are included and expanded in the other branch; those to literature, because they belong to the second part of the course in rhetoric; those to ecclesiastical questions, because out of place in this institution; those which give the author's opinions, because opinions are not history. The remainder is divided into lessons made shorter for the fifth class, as its members require it, and longer for the other classes, both because the minds are more mature, and also because in the second class there is more time both for the study and the recitation.

The text-book for the history of science and philosophy is that of Tennemann. It has much matter needless as history. It takes the metaphysical when the scientific view is required. The translation is also defective. Everything is now eliminated but what is essential for knowledge of this part of history. The rest is left for the student's reading. For omissions and obscurities, there are lectures and explanations from the professor.

These subjects include the studies in this department which regard *facts*.

The subject of ETHICS has two subdivisions. The one includes duties and their contrasts, without theory, as based on authority; the other, duties, with their reasons and principles. The first is practical; the second, theoretical ethics.

The first division, that of practical ethics, is taken by the fifth class in its second term, and has three weeks of its time, or fifteen lessons. It shows what is wrong and what is right, without the question why wrong, and why right. It presents the virtues which are to be acquired, the vices which are to be shunned, the passions which are to be subdued. It directs the pupil to his duties, both in studies, and as a member of the Academy and of the Army. It is, therefore, placed at the beginning of his second term after his first examination, when he takes the oath and is enrolled as a member of the institution.

The second division, or that of theoretical ethics, is taken by the sec-

ond class, in its second term. They then study moral science, just before entering on the study of law. It has twenty lessons.

The text-book is not suited to the course. What is wanted is not so much a theory in morals as a basis for studies in law. Much is necessarily omitted from the present work. Corrections and explanations are supplied by the professor.

LAW, with the exceptions already stated (some history and the military applications of rhetoric), occupies the first class entirely.

The divisions studied are those of *international*, *constitutional*, and *military* law.

International law is learned from Kent's Commentaries. For *constitutional* law, the Constitution is analyzed after a plan given by the professor, and the chapters on that subject in Kent, with the exception of the twelfth lecture, are studied. These two divisions of law have twenty-six lessons in the first term of the first class.

Military law and the principles and practices of courts martial are learned by lectures, by careful analysis of the Articles of War, and by the study of "De Hart on Courts-Martial." From the latter author, portions which contain peculiar theories are omitted. The remainder is read. The subject is taken by the first class in its second term, and has eighteen lessons.

The course in law demands preliminary and concurrent explanations from the professor. The members of the class are encouraged to ask questions, and to present difficulties for solution, when by so doing no encroachment is made on recitations. The answer is given on the spot, or it is reserved for investigation and for a written solution when the question may be new and difficult, or the principle comprehensive.

Such is that part of the course which is based on *principles of right*.

2. No extension is thought desirable. In all education which is complete there must be the combination of a scientific with a literary course. In colleges the latter should predominate; but in the Military Academy, the former. All that is expected for the latter here is the use of time, not taken by scientific and professional instruction. Also, no education seeks to exhaust a subject; but to give its elements, and to direct how to study it. For these reasons, extensions of instruction easily conceived are not desired.

Curtailment is not thought to be desirable.

The subjects in the course are those whose necessity has been made not only apparent but urgent, by the experience of more than fifty years. Some, from their evident and enduring value for the officer, have been prescribed by law. Others have been introduced after the repeated recommendations of successive boards of visitors. None have been admitted to the programme till place and time have been found for them, and the displacement of the subjects of other departments prevented. All have been recommended, demanded, or adopted by those who knew and who regarded "the objects for which the Military Academy is established."

An independent examination of the subjects themselves leads to the same conclusion. The question, with its circumstances, would seem to require that examination now.

The first division of subjects includes *grammar*, *logic*, and *rhetoric*.

It is not seen how any of these can properly be eliminated. An officer must write; he should write well; always correctly and clearly; when required, forcibly. For this result there must be rules, models, practice. These are included in rhetoric. Rules are furnished by the first part, or rhetoric proper; models by the second part, or literature; practice by both, and by composition. "In view, therefore, of the objects

for which the Military Academy is established," rhetoric could not be taken away.

Logic is a basis for rhetoric. As the aims of rhetoric are to instruct, interest, and move, it draws materials for the two latter purposes mainly from ethics; but for the former from logic. In acting on the understanding, logic is the closed hand, and rhetoric the same hand expanded. The former gives the propositions and their arrangement, whether for explanation or conviction; the latter arrays and colors them with language. Logic, therefore, could not be discarded.

Grammar is needed. No man can write well who does not write grammatically. Logic and grammar are also closely connected. The first part of the former is the basis for grammatical analysis, applied in parsing. Grammar, in turn, furnishes materials used in logic and rhetoric. Grammar, logic, rhetoric, with models for style given by literature, form, with composition, a connected course in language. One remove breaks the chain. Also, the course in the French language supposes preliminary instruction, at least in the principles of general grammar.

Etymology, or the first part of grammar, could not be entailed.

Derivative etymology, with its applications for defining, spelling, pronouncing, and combining words, is not only a necessary part of all education (since in any country he is not well taught who has not learned his own language), but it is essential for those who speak the English tongue, and indispensable for one who has not studied the sources and structure of its words in the ancient speech of Greece and Italy. To know the force of words which he uses in composition as well as in parsing; to correct understandingly his spelling and pronunciation; to acquire easily languages derived from the Latin; to perceive at a glance the sense of scientific terms borrowed from classic sources and used in the studies of all the departments here—the pupil must learn somewhere the derivation and structure of English words. Grammar, therefore, is required.

Parsing, it is true, could be learned before entering. Instruction in grammatical principles would still be requisite.

The second division of subjects includes *geography* and *history*.

No argument is necessary to show that an officer ignorant of geography and history is not sufficiently furnished for meeting the demands of his profession. It is supposed that there is now unanimity of conviction regarding these subjects. The school-boy's knowledge of political geography might, however, be demanded before admission. Physical geography, so useful for the officer, and so directly linked with history, should still remain.

The third division includes the subjects of *ethics* and *law*.

The subdivisions of law studied here appear to be indispensable for the officer. He is ever liable to be a member of a court-martial. In that case, he is a judge for law and fact. No one would desire a judge to be ignorant of the law which he administers, of the practice of his court, of the rules of evidence for those facts on which he is to pronounce. Military law, therefore, including the principles and practice of courts-martial, must be known. International law is demanded in war. Both these, military and international law, require a knowledge of the Constitution of the United States. The branches of law taken are thus seen to be necessary.

Law demands ethics. In the latter are found principles that strike into the former. The latter also prepares the mind for legal and

equitable discriminations in questions arising in civil and military jurisprudence.

Apart from its legal applications, the subject of ethics is important, in view of what is stated in the question, viz: "The objects for which the Military Academy is established."

It must be an object to make good men and good officers. This object requires moral instruction. The articles of war give punishment for conduct unbecoming an officer and a gentleman. A pupil should not be left to chance for learning what conduct does become an officer and a gentleman. Certain principles and conduct are required, while he is a student of the Military Academy, for its welfare and his own. He should see the outlines of the principles and conduct demanded. An officer on a court-martial judges partly by his conscience; moral considerations and estimates enter largely into his decisions. An officer exercising command in peace and war avoids serious errors only by being alive to all the moral considerations involved in each case brought before him. An officer must sway troops and sometimes populations. His ethical studies should have shown him the moral principles which control men's minds, and should have presented for self-government those passions by which other men can be governed. For these, and for other and obvious reasons, the subject of ethics is required. The last thing the nation can wish for its officers is that they shall be untaught in morals.

The two branches of the subject are needed and should be taught in distinct periods—one when the mind is less, the other when it is more mature. Duties without theory should be presented when the learner is forming his intellectual and moral habits. Theory and principles should be learned at a later period, principally with reference to jurisprudence.

Such are some of the reasons against curtailment. The subjects are thus seen to bear that test for all education, furnished by the question—What will the pupils need to use through life?

3. The method of instruction may be regarded generally² or in each of the subjects. Modifications may be viewed under the same divisions.

The general method is the same as in other departments. It consists in recitations from a text-book, accompanied by lectures from the professor, or concurrent explanations, as these are required.

The recitations uniformly consist of answers to questions and of exercises at the black-board. Lectures, when given, are subjects for subsequent recitations.

To this admirable system, common to all the departments, the only modification suggested is that of written exercises in connection with recitations.

Coming from this general view of method and modifications to each of the subjects, an answer to the question will include *text books*, *subsidiary materials*, and *position* in the programme.

The question applied to text-books opens so large a field that after repeated attempts to make a statement, which would be clear to all, and yet not run into an expanded treatise, I have abandoned the endeavor. I must refer the Commission to the two programmes which I have presented for the War Department in obedience to orders. The one is a normal programme giving the subjects of the course apart from any existing text-books. It shows what the course of instruction in this department is intended to be; though subject, of course, to the modifications induced by experience. The other is the actual programme

based on the text-books now used ; it shows what the course now is, with the materials at present possessed.

I will only make, at this time, the most general and brief statements, in order to give some conception of the modifications desired.

Grammar, logic, rhetoric, and models for style in literature should constitute one connected and progressive course in the English language. Beginning with the elements, it should advance to all the combinations demanded for the writer and speaker. Theory should direct practice and analyze models, while examples, in turn, should illustrate theory and perfect practice.

Geography should introduce and illustrate history. The effect of both on the mind should be, to furnish it with essential facts, and to teach it how to arrange those facts—first, in the order of space and time ; and, second, in the order of cause and effect. Minute particulars should be left for subsequent reading.

The first part of ethics should include the virtues, the vices, and the passions. The second part, or moral science, should be mostly a presentation of the law of nature, drawn deductively from primary principles, or inductively, as a collection of the maxims in which the codes of all nations agree. This lamp would guide to law. The conclusions in the different divisions of law should be harmonious with each other. Military law, for example, should be so presented as not to conflict with the Constitution.

Without passing to the endless task of specifications, I would say that the present text books do not accord with this arrangement. A "modification" would consist in their improvement.

Subsidiary materials would consist, for the course in language, of ample vocabularies ; for that in geography and history, of maps and charts accompanying the book ; for that in ethics and law, of tabular views. All these aid the mind through the eye. Some of them are now imperfectly supplied.

As to the position of subjects in the programme, the present order results from the united force of several considerations, each of which is necessarily influential. Their places and extent have been fixed, partly by the low requirements for admission to the Academy, partly by the present condition of text books, partly by the necessity of avoiding interference with the scientific courses, mainly by the natural sequence and mutual dependence of subjects. The latter consideration has been uniformly obeyed, till a departure from the natural line has been compelled by the others. For example, the place for geography is fixed by the first consideration, that of logic by the second, that of history by the third. But, in conformity to the last, all military subjects and applications are in their natural position—the second term of the first class. Military history, military law, and the military applications of rhetoric are examined by the student just before he graduates.

If the causes for the present arrangement remain in undiminished power, they are sufficient to preserve it unchanged. But if they are modified I am prepared to recommend a correspondent modification in the arrangement. It is not recommended, apart from the conditions to be stated.

The arrangement consists in giving, simply, the three divisions of subjects to three classes. The subjects of the first division—grammar, logic, and the two parts of rhetoric, including, of course, declamation and composition—could be taken by the fifth class, with the exception of the lectures to the first class. The subjects of the second division—geography and history—could be assigned to the second class. The

subjects of the third division—ethics and law—could be allotted to the first class, with the exception of fifteen lessons in practical ethics, given to the fifth class.

The simplicity of the arrangement recommends it. Each class finds unity in the matter studied. The fifth class is occupied with language, the second with facts, the first with principles of right. In each year a specific and different discipline for the faculties is proposed. It is also recommended by its accordance with the wishes of the scientific departments regarding the fourth class.

The conditions on which this arrangement is dependent are these: 1. That parsing and elementary political geography be learned before admission; 2. That the division of geography studied by the second class be the physical; 3. That text-books strictly suited to such a course be secured before it be attempted. I regard these conditions as essential, and can give reasons if they do not suggest themselves to every mind familiar with the course or with education. Another provision I would recommend, though I do not place it on the same basis with the conditions stated. It is that written exercises be furnished by the other classes at intervals, so as to secure practice with the pen.

Without the three conditions given, I am not prepared to recommend this arrangement of subjects. The present would be preferable.

4. The practical instruction consists in composition and declamation. With the exception regarding composition just suggested, it does not need to be extended nor to be curtailed. The plans for this department embrace a system of progressive exercises.

5. The time required *daily* from the cadet for study in the course prescribed for my department is, in the fifth class two hours, and the same for each lesson; in the fourth, half an hour, or one hour for each lesson; in the second, about one hour and a quarter, or two and a half hours for each lesson; in the first, half an hour, or one hour for each lesson.

The modification conditionally proposed by me in the position of subjects would, if adopted, take away the recitations of the fourth class, and require two hours for each lesson from the first class.

Others would have no effect on the time required for studies in this department.

7. "In recitation and in the section room" each cadet is occupied in the fifth class one hour daily; in the fourth class, one hour every other day; in the second class, one hour and a half every other day; in the first class, five hours in two weeks, that is for one hour every alternate afternoon, with the exceptions of Saturday and Sunday.

The utmost deference has been shown in this department to "the demands made on the student by other departments at the same time." Hence came the transference of history and other changes to which reference has been made. No interference can now be imagined except in the fourth class. There the lightest reading has been provided, and of that, in rhetoric and literature, only about seven pages are taken for a lesson every other day. A half hour's attention daily to the book is sufficient to prepare for recitation. The hour is not filled (as I have stated) by the recitation, but is partly occupied in reading aloud, so that faults in pronunciation and manner may be corrected. The time might also be partially occupied in writing out the substance of a passage which has been read. If there be interference, it is at least brought to its minimum. Should even this be the ground of

objection, the conditional modification suggested would remove it entirely.

8. None.

9. The last question seems to include both the course of instruction in this department and the whole course of the Military Academy.

Taking the first, I would say that the primary want of my department is for text-books, clear, simple, disembarrassed of needless matter, and suited to the habits of mind formed necessarily by the system of the Academy in its pupils. I have already touched upon this topic, but under this last question another view of the same matter is in part taken. Some institutions have instruction given by lectures. In them the first demand is, that the person teaching may prepare his lectures and have the requisite facilities. Where institutions rely on text-books, the same primary necessity exists for them. But in the Military Academy there is a peculiar reliance on the text-book. On that the pupil is marked; by that he is examined. It is the rail-track for the learner, the instructor, the Academic Board in determining class standing. If that be suitable, the effect is pervading. It is from no wish for a thankless and difficult task, it is solely from a conscientious conviction with reference to the pupils, the Academy, the Army, and the country, that the statement is now earnestly made that the primary want of this department is for the requisite facilities in securing books adapted to the objects for which the Military Academy is established. Every instructor who knows his course and his pupils, knows what he needs. The books prepared for other institutions, and those made in other countries, want that adaptation. The head of the department is also chaplain. The classes in this department are reciting during seven hours daily, excepting Sunday, and then through four hours. Current duties thus engage the whole time and thought. Partial and temporary compilations thrown out under this pressure to meet emergent deficiencies give a wrong conception of the course. The temporary structure is mistaken for a part of the plan of the building. The remedy consists in giving partial relief, not from the duties of chaplain, but from the current duties of a professor, during a few months, that the ample materials existing may be simply put together. This is said from no personal wish, but from a conviction as to the first need of this department, under any head. Several other departments have effected this task. The reason why more facilities are needed in this is that its weekly duties absorb so much more of time.

In coming to the general course of the Academy I will endeavor to give my best judgment, while yet feeling that more reliance is due to that of others.

In the general system of instruction it would seem well if the constant use of the pen, in analyzing and preparing recitations in all subjects, could be secured. It has been said that to read without the pen is to sleep. It is desirable to have the mind both active and receptive in learning a lesson. The exercises at the blackboard promote speaking and fluency; the questions, thought and attention. This would seem to give the system perfection, by fostering writing and its attendant habits. Writing makes the exact man.

It would also seem well if the members of the first and second classes could investigate subjects in the library.

I am aware that practical difficulties often obstruct the way to desirable objects.

In regard to the length of the course, my views have been already given in a report required for the War Department. The age, the de-

mands on the military profession, the standard of general culture and education in the country and the world, demand certain acquirements in officers of the Army. The simple question seems to be, Shall all these be given here, or a part required before entering? If the latter plan be adopted, the standard for admission should be raised sufficiently. If this be done, and especially if competitive examinations be required, the course may be reduced to four years, or even to a smaller number. If not done, then the needed acquirements are to be made here; and, if so, time must be provided. In this view a course of the extent of five years appears to be a necessity.

The pupil of the Academy is a member of the Army before he graduates. He is but the same after graduation and when an officer. In both positions he is a part of the same organization, paid by the country, and giving the country service for the public welfare. Is that public welfare best promoted by his serving here for a year, devoting himself to improvement in his profession, or by his serving elsewhere for the same year in the ordinary routine for young officers?

If, for the present course, the provision for elementary grammar and geography be inserted among the requirements for admission, the standard, viewed relatively to the whole country, would not, it is thought, be altered. The present law was made long since, when population and the facilities for primary education were less. It does not appear to be too much to require of a candidate in the most remote and unfinished portions of the country that before coming here he shall read a common school grammar and so much of geography as is now learned by very young children.

Whether, however, these or other arrangements be or be not made, all who reflect will agree in the conviction that the course, however arranged, shall have stability. The evils not only from change but from liability to it and expectations of it are immense. Under any system once established and known to be unalterable, or altered with difficulty, practical wisdom can supply deficiencies. It is thought that few public institutions of learning can be found in the world where the subjects of its course are liable to be changed by the will of individuals, of single teachers, or of the pupils themselves. Whatever is so organic as the course is usually settled by some permanent authority. It would seem, therefore, proper that this organic regulation of the course should be fixed by the law-making power, placed beyond change for ten years at least, and liable then to be proposed for change only by a board appointed for the special purpose and composed of men from military and civil life. Measures, details, plans for applying that course thus fixed, may well be left to the wisdom of the War Department and the experience of the Academic Board.

J. W. FRENCH,
Professor, &c., U. S. Military Academy.

W^t.

UNITED STATES MILITARY ACADEMY,
West Point, N. Y., August 15, 1860.

SIR: I have the honor to acknowledge the receipt of your letter of the 18th ultimo, as secretary of the "Commission instituted under the act of Congress of June 21, 1860," to examine into the organization

of this Academy, inclosing to me a list of questions, replies to which I am requested to make "and transmit to the Commission."

I. In reply to the inquiry as to "what subjects are taught in your [my] department," and in compliance with the direction "to state briefly the amount of instruction given in each," I would respectfully say: First. That my duties are at present limited exclusively to teaching the Spanish language to the cadets of the *third class*; and, second, that the Spanish language, under the present arrangement, is not taught to the fifth, fourth, second, or first classes. In consequence, no cadet is, during the entire academic term of five years, engaged in learning that language except for eight and a half or nine months in his *third year*. This period is divided into *two* terms. The *first* commences on the 1st of September, and ends on the 31st of December of each year; and the *second* commences upon the close of the annual examination in January, and ends May 31, in each year. The third class of cadets is divided into sections according to the number of cadets in each class. Each section has generally averaged about twelve. Since April, 1857, when I was appointed Professor of Spanish at this institution, the number of cadets composing the third class has not exceeded sixty, nor that of the sections five. The sections have from time to time been arranged in order of merit according to my impartial judgment of their proficiency in Spanish. The time devoted by each cadet whilst out of the section room to the study of his Spanish lessons must depend chiefly upon the pupil himself. During the second year of my professorship I had for assistants, Cadets Merrill and Bush; and during the last past year, Lieutenants Lockett and Carling. Three hours of each recitation day, from eleven to one, and from three to four (or other equivalent time in the p. m.), are, under the present arrangement, devoted to the recitations in the section room. The recitations of the cadets of one section of my class (always the first section) are heard by myself, occupying an hour each recitation. Each assistant instructor, likewise, devotes two hours of such day to the recitations of two sections (one hour to each section), and I have generally superintended personally these recitations during a portion of each hour.

II. In reply to the questions "whether, reference being had to the objects for which the Military Academy is established," should the teaching of the Spanish language at the Academy (the branch taught in my department) be "extended," I have to say as follows:

The course is deemed too brief for the objects which in view of the commercial and political connection between the United States and the Hispano-American States, it is fair to assume, caused the Spanish language to be added to the studies prescribed for the Military Academy. I have supposed that "the objects for which the Military Academy has been established" are exclusively *military*. The Military Academy is a branch of the Federal military service. It is in some degree a part of the Army. The cadets are from their initiation into the Academy subaltern officers, subject to and regulated by *military* law. They are destined, after graduating, to serve as officers of the Army, and are educated at the public cost to this end. Though they acquire by the teachings at this school knowledge calculated to be of eminent utility to them and to their country, if they should after concluding their studies here resign their military commission and pursue any of the vocations of civil life, yet this Academy is intended to be essentially a military school, and the *primary* "objects" of its establishment are solely military.

So regarding these "objects," I must presume that Congress and the

Federal Executive, by the institution of a Spanish professorship here, entertained the opinion that officers of the Army of the United States, knowing how to translate, write, and converse in *Spanish*, would be better enabled to render valuable service to the country as soldiers than if ignorant of such language. The time is too short to secure, to the desirable extent, these qualifications.

I do not presume to be cognizant of all the different and various reasons and motives that may have prompted the Federal legislative and executive authorities, having charge of the government of the United States, to establish the Spanish professorship here, and which has caused such general approval of that measure by the people of the United States, to which this institution belongs; but some, which it may be presumed has influence, can be readily adverted to. I have addressed to the Hon. Jefferson Davis, president of this Commission, a brief *memoir* in relation to the importance in a military point of view of the Spanish language to the cadets at this institution; and, if it be not deemed inappropriate to the matters in relation to which the queries have been propounded, and which I am now answering, I beg that it may be considered in relation with these answers. I have no hesitation in expressing the confirmed conviction that the study of the Spanish at this Academy ought not to be curtailed either with respect to the number of lessons, the time devoted to their acquisition in quarters, or to their recitation in the section room, where alone the necessary oral instruction can be given. On the contrary, I believe the number of lessons and the time for study and recitation should be increased. Any modifications or changes that may look to a reduction of the time at present allotted to the study of Spanish by the third class (now less than one and a half hours each recitation day) would defeat the ends for which this language was added to the course of studies.

With respect to the time allotted in the third class, the hours of recitation and oral instruction (eleven to one and three to four) should not be altered. But one hour is devoted to each section, and less would not suffice. In addition thereto, in reply to that part of this question having reference to the mode and character of any *extension* proposed by me, I would respectfully suggest that the cadets of the second class should be allowed an hour per day for *study*, and an hour per day for *recitation* in Spanish, at such time of the day as may not interfere with more important studies. The "*extension*" now proposed would, to be sure, *double my duties* and that of my assistants, but I should be satisfied. Two years intervene between the close of a cadet's Spanish studies and his final examination under the present arrangement, for he is not required to practice speaking or writing *Spanish* after the third year, and it may well be conceived that what he may have learned would, in a great degree, be lost in exclusive devotion to other subjects during this interval. Every one knows that a foreign language acquired by study at school, and of which the lessons are neither extensive, numerous, nor long continued, is not so readily retained, without such practice, as the exact sciences, the rules of which once thoroughly learned are rarely forgotten. The extension proposed would remedy, in a great measure, the evil, by removing the long interval between the study and the practical use of the language after graduation. The chief exercises for the second class should be in Spanish composition, translations of Spanish into English, of English into Spanish, and in reading, in order to perfect pronunciation, books of unquestioned "philological merit" and of undisputed "practical value" in Spanish and English *literature*, as well as of the Spanish *language*. If my suggestions cannot be carried

into effect, I hope that during the four months of the first term lessons for the study of Spanish, as now arranged, may be increased to *daily* lessons in lieu of tri-weekly, as they now are.

III. As to "the *method* of instruction pursued in your [my] department," it is as follows:

At the commencement of the first term of the study of Spanish each cadet of the third class is supplied with the books mentioned in the "synopsis of the course of studies of the Academy," to be found at the end of the "Official Register of Officers and Cadets," annually published. They are, as there stated, "*Josse's Grammar*," *Morale's Progressive Reader*," and "*Ollendorff's Oral Method applied to the Spanish by Velazquez and Simouné*." To these should be added "*Velazquez's Spanish and English*, and *English and Spanish Pronunciation Dictionary*," not named in the said list.

It has been intimated by those to whom the highest deference and respect are due, that these books of instruction are not the best that could be procured for the use of the cadets here, and that they possess "little of philological merit and but moderate practical value as helps to instruction," and that "a different and more extensive" system of grammar and reading lessons should be "introduced, and new text-books prepared."

I would respectfully request the honorable the Commission to read a letter that I have addressed to the honorable the Secretary of War, dated the same day as these answers, relating to said "text-books," and stating particularly the portion of *Josse's Grammar* and *Ollendorff's* system which I *do not* use, and those portions which I *do*; and showing also that I was constrained by the decision of the *Academic Board* to adopt *Josse's Grammar* against my judgment, and thereby precluded from adopting an additional book for reading and translating exercises; and which letter also contains an offer, by me, to *prepare* proper lessons for instruction in Spanish for the use of the cadets, free from charge, if the same, upon being approved by the War Department, be *printed* (in sheets or in a volume) exclusively for the Academy at public cost.

I am confident that every well-informed, experienced, and unprejudiced tutor of Spanish to American pupils will unhesitatingly decide that the "text-books" or "books of instruction" which are used here (excepting *Josse's Grammar*) *were the best that could be had in 1857, and even now*, for teaching Spanish to cadets (who possess more intelligence and aptness than most other pupils, and are more than 19 years of age), when it is considered they are limited to less than 183 lessons in number, all within nine months, and only of one hour, or, at most, an hour and a half for study, and one hour for class recitation and "*oral*" instruction according to Ollendorff's system.

To find fault with any system devised by human intellect is easy, even to persons not the most competent to judge. The most sacred things do not escape the invidious carplings of presumptuous man. This disposition is a vice of our nature. But in this matter, for any of the defects and imperfections of these text-books, *I am not responsible*. I did the best I could do under the circumstances, and my judgment was controlled, and I was constrained to acquiesce in the continued use of one that I *objected* to. In the outset of my career as professor here it would have exhibited consummate vanity for me at once to have offered to *prepare* lessons as I have suggested, and which my subsequent experience, I believe, will now justify me in attempting.

As to the *details* of the "*method* of instruction" I have practiced,

I considered from the first that the Lancasterian mode of recitation by a class of several scholars simultaneously, and in cadenced measure and tones, though much lauded by some (and it is certainly calculated to please a lazy and careless tutor and may be useful in teaching small children to spell and read *their own* language), is totally unfit to be practiced in teaching a *foreign* language to cadets, or other like capable scholars. If errors of pronunciation of a word by every scholar could be detected by the teacher they could only be corrected by stopping the *entire class* to instruct each member of it when he committed such blunder. Such exercises would be derided by cadets as tending to make them appear ludicrous. Yet, the adoption of that system has its advocates. So, also, the delivery of formal written lectures or essays by teachers is a favorite mode of teaching by some, and perhaps in the science of law, in the teaching of pupils for the church, and in some few other branches of learning, it is the best mode, but for instruction in any practical art, or in teaching of a foreign language, it is a worthless mode. It may gratify the egotism of the lecturer, but even if his essays are interesting in style and matter, and well delivered, their effect is ephemeral; and, if inferior in composition or delivery, or if the subject is a dull one, the pupil is prone to sleep, or, if awake, to be inattentive, and in after times remembers them only with disgust.

In my section room generally some of the cadets are required to rehearse part of their Spanish lesson; others to write different parts on the blackboards at the same time; others are directed in same ways to conjugate verbs or decline nouns or other parts of speech, whilst others translate Spanish into English or *vice versa*, according to the lessons prescribed. Reading in Spanish is practiced in the section room by cadets almost every day after they are sufficiently advanced, but it is amongst the later lessons. The instructor has to attend closely to the detection and correction of mistakes, to the giving of such explanation as may be necessary. Pronunciation, which no book can give, is made the special care of the instructor. If the pupil is intelligent he may find most other information in the books of instruction. My experience has taught me that this, though the most laborious, is by far the most important part of my duty.

It will be seen that if the twelve cadets of one section were all examined, or all recited, or used the black-boards separately and in rotation, each one would have but *five minutes* of the allotted hour. Hence each one is directed to do something that no other one is doing, relating to the lesson, and all are engaged at the same time, each receiving *oral* instruction from the instructor respecting his own part; and there is also always such oral instruction to the entire class, having reference to the lesson in hand, and to the etymology, orthography, syntax, and other parts of grammar, composition, and structure of the language, and especially of *pronunciation*.

The improvements I suggest in the "*method*" of instruction are limited to the exclusion of Josse's Grammar, the continuance of "Ollendorff's Grammar" (by Velazquez and Simouné) as the *sole* grammar to be used, the continuance of "Morale's Reader," and also of Velazquez's Dictionary; and *if additional time is allowed*, as suggested in the answers, the adoption of an additional reader by some approved Spanish author; or in any event, if desired, the preparation by me of lessons adapted to cadets, as I have stated in my letter to the honorable Secretary of War.

As to the precise conduct or routine of the recitation, of rehearsals, or as to the particular mode of the *oral* instructions, the professor and his

assistants can best decide upon the same, at the time and under the circumstances that may exist, adhering generally to the rules heretofore practiced, and which have resulted so beneficially.

IV. In my answers, given above to previous questions, I have fully stated my views. These comprise the only response I can make to the inquiry as to what practical instruction, given by me, should be "curtailed" or "extended." It will be seen that, in my judgment, "Josse's Grammar" may be dispensed with, and the lessons given from it may be taken from those portions of Velazquez and Simonne's Ollendorff's now omitted. It will be seen, also, that if additional time is allowed for the study of Spanish by the cadets in the fourth year of their term (*i. e.* the *second* class) an additional reader could be introduced, from which translations of the best character could be made, in addition to those to be found in Morale's Reader. (*Vide* ante questions II and III.)

V. The pupil should devote at least two hours to the study of each lesson. There would be neither increase nor diminution of this by the modifications proposed. Each cadet is one hour in the recitation room when reciting Spanish, and the time actually occupied in recitation, depending upon the number of the section, is generally about five minutes.

VI. My answers to previous questions fully state the number of hours each cadet is "occupied daily in recitation and in the section room," viz: one hour every other day for four months, and one hour every day for five months, always of course excluding the Lord's day, and in actual recitation about five minutes; and they show, also, that it is presumed that each cadet occupies from an hour to an hour and a half for each recitation day in the study of his lesson at his quarters.

VII. I do not think the "time nor amount of study" heretofore required in my department is such as to "overtask the student, even regard being had to the demands made upon him by the other departments at the same time," so far as I am acquainted with the character and amount of the demands last mentioned. Attending to my own functions exclusively, and indeed carefully avoiding any officious intermeddling with those of the other professors, which course I deemed would best enable me to fulfill my own duties properly, I confess that I am not particularly well informed as to all the details of such demands; nor do I know fully the extent or character of the additional requirements proposed to be made of cadets in reference to those other departments. Certainly I think it must be conceded that the routine of study required from a cadet during the whole five years of his educational probation here is tolerably severe, but not more so than exists in schools of like character and in the best colleges and universities in Europe and in this country. Without a great deal of previous reflection upon the subject, I have heretofore acquiesced in the suggestion made by others, that the course of study here might be reduced to *four* years; but more mature consideration has induced the opinion that, inasmuch as such change would necessarily require the imposition upon cadets of still more severe labor and strict confinement to studies, tending to overtask him mentally and physically, or else a relaxation of the requirements as to amount of acquirement in the different subjects of study, such change would be unfortunate for the cadets and deleterious to the institution and to the country. The education (military and general) which the cadet would acquire here in such *decreased* time would certainly be less thorough than at present. The reputation of the institution would decrease in proportion to the superficiality of

the education of its *élèves*, and the country would not receive the same benefit from such limited knowledge by its officers, educated for its service and at its cost.

VIII. I do not think the time or amount of study required in my department on the part of cadets is such as to "overwork" them, nor have I ever witnessed any "indication of weariness" in cadets as to such study, nor do I think the extension proposed, as above, by me would have such effect. I express this opinion confidently, as I am entirely satisfied, from the conduct of my pupils and the repeated declarations of some of them, that it is by most of them regarded as an easy study, and by no means so unpleasant as some others. In fact, not a few appear to be highly pleased with and take a great interest in such study, and hence it is that I have accounted for their extraordinary proficiency at the January and June examinations, "considering the limited facilities of study allowed them." General observation and experience have induced the opinion that when, from the character of the study, it is not only difficult, but unattractive and uninteresting, and when the student does not perceive any utility to be derived from it at a future time to himself, "indications of weariness," and even of being overworked, are likely to show themselves in a greater degree than would result from a greater amount of mental and physical exertion and labor, and longer time employed in study, which is agreeable and pleasant. But I do not think that, in respect to *any* of the studies here, cadets exhibit more dissatisfaction than usually is to be found among students in public seminaries, in relation to some branches of their studies, if as much.

I shall, I trust, be excused for the expression of my ardent gratification that, since I have been professor of Spanish here, I have not witnessed the slightest manifestation of repugnance by any cadet to the method pursued by me for their instruction in Spanish, nor dissatisfaction with the works used, nor any disinclination to such study, but that all have appeared to appreciate its importance to themselves, and to be influenced by honorable emulation to excel in it, and to be aware that the brief time allowed for such study created a necessity for their continued application to it after the expiration of such time, in order to attain and retain useful proficiency in the language.

IX. I am required, by this question, to suggest any modifications or changes respecting the course of instruction at this Academy not embraced in my foregoing answers that would, in my opinion, conduce to the accomplishment of the objects of its establishment. I have presumed that this question was not designed to extract any mere opinion of mine as to the mode and method of teaching pursued here by any of the other professors in any of their departments, but that I was expected to state fully as to my own. The task of reporting upon my fellow professors would be an indelicate and invidious one, and being without that peculiar and superior knowledge of the subjects intrusted to *them* to teach, and the best modes of teaching them, I should respectfully decline such task. I am persuaded that the honorable Commission would regard all such criticisms and animadversions, if in any degree volunteered, as unworthy and censurable. Nor would this honorable Commission fail to distinguish between answers given to the queries propounded from a conscientious sense of duty, and those eagerly given as such response and for which the queries are availed of merely as a pretext and shield. I refrain, therefore, from making any such suggestions.

May I be permitted to state, in conclusion, that I regard the convo-

cation of this Commission as most auspicious for the future welfare and reputation of this Academy, for it can ascertain and suggest for adoption such measures as may tend to secure the continuance of its reputation as one of the first military schools in the world.

Respectfully submitted.

P. DE JANON.

Professor of Spanish.

Lieut. J. C. IVES,

Secretary to Commission.

Y¹.—*Bill of Fare at Cadets' commons.*

Days of the week.	Breakfast.	Dinner.	Supper.	Remarks (written in pencil).
Sunday	Coffee, milk, sugar, rolls, bread, butter, boiled hominy or samp, cold cut meat, and boiled eggs.	Roast beef, veal, lamb or mutton, boiled ham, with gravy. Potatoes, parsnips, onions, asparagus, lettuce, and green peas; pickled beets or cucumbers. Boiled rice, bread, and molasses. Boiled corn beef, salt pork, pea or bean soup. Potatoes, carrots, spinach, pickled beets. Puddings, bread, butter, and molasses. Roast beef, veal, lamb or mutton, with gravy. Potatoes, parsnips, onions, asparagus, lettuce, and green peas; pickled beets or cucumbers. Boiled rice, bread, and molasses. Boiled beef and vegetable soup. Potatoes, carrots, spinach; pickled beets. Puddings, bread, butter, and molasses. Roast beef, veal, lamb or mutton, with gravy. Potatoes, parsnips, onions, asparagus, lettuce, and green peas; pickled beets or cucumbers. Boiled rice, bread, and molasses. Boiled fish, baked beans, salt pork or boiled ham, roast beef, veal, or mutton, with gravy. Potatoes, parsnips, onions, spinach; pickled beets. Boiled rice, bread, butter, and molasses. Boiled corned beef, salt pork. Potatoes, carrots, spinach; pickled beets. Puddings, bread, butter, and molasses.	Coffee, milk, sugar, bread, butter, berries, and stewed apples. Coffee, milk, sugar, bread, butter. Coffee, milk, sugar, bread, butter, berries, and stewed apples. Coffee, milk, sugar, bread, butter, and hot buns. Coffee, milk, sugar, bread, butter, berries, and stewed apples. Coffee, milk, sugar, bread, butter, and stewed rhubarb. Coffee, milk, sugar, bread, butter.	Celery, string beans, tomatoes. Egg plant, cabbage. String beans, tomatoes. String beans, tomatoes. Egg plant, cabbage.
Monday	Coffee, milk, sugar, bread, butter, hot corn bread, molasses, hashed meat, and potatoes.			
Tuesday	Coffee, milk, sugar, bread, butter, boiled hominy or samp, and cold cut meats.			
Wednesday	Coffee, milk, sugar, rolls, bread, butter, hashed meat, and potatoes.			
Thursday	Coffee, milk, sugar, rolls, bread, butter, hashed meat, and potatoes.			
Friday	Coffee, milk, sugar, rolls, bread, butter, hashed meat, and potatoes.			
Saturday	Coffee, milk, sugar, rolls, bread, butter, hashed meat, and potatoes.			



Respectfully referred to Lieutenant Ives, Secretary of the United States Military Academy Commission.

W. J. HARDEE,
Lieut. Col. U. S. A., Commandant.

WEST POINT, August 2, 1860.

Respectfully returned, by direction of the Commission, to Colonel Hardee, with the request that a detailed statement may be furnished of the exact number of dishes that is supplied upon each day, at the different meals, to the cadets, which dishes, among those herein specified, are most commonly selected as the fare, and by whom the selection is made.

J. C. IVES,
First Lieut. Top. Eng'rs, Secretary.

WEST POINT, N. Y., August 3.

The purveyor of the cadets' mess commons is governed by a general bill of fare, made or sanctioned by the Superintendent of the Academy.

The one adopted several years ago is the one still in force, with the exception of the additions of several dishes. These additions have from time to time been made by the purveyor, but always by the tacit or implied permission or direction of the Superintendent. The selection of specified dishes for the day or meal is made by the purveyor, under the regulations, and depends mainly upon the practicability of obtaining the supply—a proper regard being had to sanitary conditions connected with the articles to be used. Milk, eggs, and vegetables (excepting potatoes) are obtained fresh and daily from the dairy and garden appropriated to the use of the commons, and the cost of raising, cultivating, &c., is paid by the cadets in the amount of charges for board.

The amount of any dish used is limited by the amount that is supposed will be consumed; and is changed from time to time, as may become necessary, by the directions of the purveyor.

BREAKFAST.

Coffee, milk, sugar, bread and butter, always given daily.

Rolls (number limited to one each cadet) every day except Monday and Tuesday.

Hominy or samp, boiled, every Sunday and Tuesday.

Hot corn bread, with molasses, every Monday.

Hashed meat and potatoes, every day except Sunday and Tuesday, (as a substitute for cold meat—preferred by the cadets).

Cold cut meats, every Sunday and Tuesday.

Boiled eggs, every Sunday when practicable.

Tomatoes, cut and vinegared, daily when in season and practicable.

Radishes, daily when in season and practicable.

Cucumbers (green), cut and vinegared, daily when in season and practicable.

Young onions, daily when in season and practicable.

DINNER.

Sunday, Tuesday, and Thursday—

Roast beef—the standard dish for these days—frequently one of the other specified dishes, lamb, veal, or ham, is substituted; occasionally two, as beef and lamb, beef and veal, or beef and ham. Two dinners of turkey, and one of three, beef, veal, or lamb, and ham dishes, are furnished in the year; with dessert of mince pies.

Potatoes, rice, and beets, or pickled cucumbers, always on the above days. The other vegetables specified in the bill of fare are given in their season, generally *one*, frequently *two*, and occasionally *three*, according to the supply.

Bread, sirup, and gravy, always.

Monday and Saturday—

Boiled corned beef, the standard dish; frequently boiled salt pork or ham is given with the corned beef.

Pea or bean soup, every Monday (an addition to the old bill of fare).

Potatoes and beets, and one other vegetable of those specified, always; frequently two on the above days.

Bread and butter, always.

Puddings (corn meal, bread, or rice), with sirup, always.

Wednesday—

Boiled fresh beef, beef (vegetable) soup, always.

Potatoes and beets, and one other vegetable, always.

Bread, butter, and puddings, with sirup, always.

Friday—

Fresh fish (when it can be procured; when not, a beef or ham dinner is substituted).

Baked pork and beans, always (an addition to the old bill of fare).

Butter, always when fish, corned beef, or ham is supplied; gravy when roast beef.

Potatoes, beets, and rice, and one other vegetable, specified in the bill of fare, always; frequently two other vegetables.

Bread and sirup, always.

SUPPER.

Coffee, milk, and sugar; bread and butter always.

Warm buns, every Wednesday.

Berries, three or four times per week during their season.

Stewed apples or pears, three or four times per week during the fall and winter.

Stewed rhubarb, three times per week during its season.

Respectfully submitted,

W. J. HARDEE,
Lieut. Col. U. S. Engineers, Commandant.

Statement of the amount of provisions consumed in two months, the average consumption per cadet, per diem, and per issue, for the two months of May and June, 1860.

The average number of cadets present two months each.....	246
The average number of employes present two months each.....	30
Total.....	276

Articles.	Amount.	Average per cadet and employe (276).			
		Per 61 days.	Per day.	Daily issue.	
				Days.	Amount each day.
Beef, fresh.....pounds..	6,799	24.6340	.403836	31	.794645
Beef, salt.....do....	3,692	13.3768	.219292	17	.786870
Veal.....do.....	615	2.2282	.036529	3	.742753
Lamb.....do.....	236	.8551	.014017	1	.855072
Pork, salt (with ham, fish, &c.).....do....	316	1.1449	.018769	9	.127214
Ham, smoked.....do.....	891	3.2283	.052922	4	.807065
Fish, fresh.....do.....	519	1.8804	.030827	5	.376087
Bread.....do.....	20,886	75.6739	1.240556	61	1.240556
Corn meal.....do.....	744	2.6956	.044191	8	.336950
Flour, Graham.....do.....	786				Made into bread.
Flour, white.....do.....	14,250				do
Hominy.....do.....	520	1.8840	.030886	17	.110827
Rice.....do.....	1,015	3.6775	.060287	35	.105072
Beans, dried.....quarts..	160	.5797	.009503	11	.052701
Pease, dried (for soup).....do.....	48	.1739	.002851	4	.043478
Butter.....pounds..	3,256	11.7971	.193395	61	.193395
Eggs.....number..	2,035			3	1 and 2 when for table.
Lard.....pounds..	46	.1667	.002732		
Milk.....quarts..	4,110	14.8913	.244129	61	.244129
Coffee, roasted.....pounds..	920	3.3333	.054645	61	.054645
Tea, black and green.....do.....	15	.0543			For hospital & employes.
Sugar, brown and white.....do.....	3,664	13.2754	.217629	61	.217629
Molasses.....quarts..	1,045	3.7862	.062069	61	.062069
Vinegar.....do.....	276	1.0000	.016394	61	.016394
Asparagus.....pounds..	222	.8043	.013186	4	.201057
Beet tops.....do.....	397	1.4384	.023580	10	.143841
Lettuce.....do.....	244	.8841	.014493	10	.088406
Rhubarb.....do.....	418	1.5145	.024828	7	.216356
Spinach.....do.....	519	1.8804	.030827	10	.188040
Cucumbers, pickled.....number..	236	.8551	.014017	2	.427586
Beets.....pounds..	931	3.3732	.055300	61	.055300
Carrots (for soup).....do.....	35	.1268	.002080		
Potatoes.....do.....	16,112	58.3768	.957000	61	.957000
Onions (for soup).....do.....	14	.0507	.000831		
Horseradish.....do.....	20	.0725	.001188	1	.072464

J. BRATT, Purveyor.

WEST POINT, N. Y., August 13, 1860.

AUGUST 15, 1860.

Respectfully forwarded for the information of the United States Military Academy Commission.

W. J. HARDEE,
Lieut. Colonel, Commandant.

Z¹.

WATERVLIET ARSENAL,
July 30, 1860.

SIR: I have to acknowledge the receipt of your letter of the 18th instant, requesting my views as to the changes which may be desirable

in the *organization and course of instruction* of the Military Academy, for the use of the Commission of which you are the secretary.

As this Commission has been appointed with reference to new legislation on the subject of the Academy, all questions relating to it are open to consideration.

ORGANIZATION.

Under this head the question has been often agitated, whether the Academy should continue to be formed of the Corps of Engineers, as now provided by law, or should be disconnected from any special corps. Practically, the law which directs that the Corps of Engineers shall be stationed at West Point has become a dead letter, and cannot be carried out, as the proper performance of the duties of the Chief Engineer seems to require that he should be stationed at the seat of government. The question with regard to the Academy, therefore, resolves itself nearly into the inquiry, whether the appointment of Superintendent should be made exclusively from the Corps of Engineers, or be thrown open to selection from other corps.

When the first great improvement of the Military Academy commenced, under the able management of its most distinguished Superintendent, Colonel Thayer, that officer recommended that the appointment of Superintendent should be thrown open to the whole Army; and his recommendation was concurred in by General Bernard and Colonel McRee. But this was in 1817, and I think it probable that the opinions of these officers might be different at this time. The Army and its officers were then held in high consideration for their recent services, and the administration of military affairs was but little affected by the interference of party politicians. This has, unfortunately, ceased to be the case now; and it may be considered fortunate for the Academy that the law has imposed a restriction in the choice of its Superintendents. The "*esprit du corps*" will naturally stimulate the officers selected for this position to preserve the high character of the institution, and to oppose doubtful experiments in its management.

The officers of the Corps of Engineers are selected from the most distinguished graduates of the Academy; and although academic distinction does not, in all cases, guarantee the possession of the good common sense and administrative ability which are necessary qualifications for an able Superintendent of the Academy, I think that the personal history of the Corps of Engineers may be safely appealed to in proof that these qualities are at least as likely to be found among those distinguished for other mental attainments as among any other class of men.

It has been suggested that the field of selection for Superintendent might be advantageously enlarged by extending it to the "three scientific corps"—meaning, I suppose, the Engineers, Topographical Engineers, and Ordnance.

But, to say nothing of the invidious exclusion of the other, and the largest part of the Army, which such an arrangement would cause, I think that this extension would not effect the principal object which might make such a measure desirable—that of infusing into the Academy the military spirit and practical instruction derived from active service with troops in the field. This object may, perhaps, be now attained by means of the faculty, which the local rank of the instructor of tactics gives, to select an officer of experience from the line for that position; while the like provision with regard to the rank of the Super-

intendent removes most of the difficulties formerly resulting from the selection being restricted to the Corps of Engineers.

Another important question of organization relates to the appointment of professors. The law provides that they may be officers of the Corps of Engineers; but in practice for many years past they have been required to give up their other commissions in the Army, on receiving that of professor.

This system is liable to serious objections. When I entered the Military Academy, two of the professors, who were men not only of eminent scientific attainments, but who had been employed by the government in important works of practical science, had become superannuated; and, as long as they remained attached to the Academy, it was impossible to make any considerable improvement in the course of instruction in their respective departments. In the course of nature such a state of things is likely to recur; and in the absence of a system of retiring pensions for the Army, the most equitable and simple remedy for the evil is to permit the professor, wearied and overburdened with academic studies, to return to his military corps. If capable of duty, he may there have opportunities to apply his knowledge to the service of the country in a practical way, while his mind and body may be reinvigorated by intercourse with the world and by exercise, so that he may even resume, with increased efficiency, the duties of his charge; and, if incapable of active duty, less injury to the service would result from his inactivity in his regiment or corps, where others may supply his place, than from remaining an incumbrance on his department at the Academy. I think, therefore, that, whether a retired list for the Army (including professors) is adopted or not, it would be better to provide that *hereafter* professors may be taken from the Army (not exclusively from the Corps of Engineers), and may retain their Army commissions. The retiring system would be equally necessary in the cases of professors who may not be taken from the Army, and it should, therefore, whenever adopted, be made to apply to these cases.

With regard to the appointment of cadets, the minimum age for admission to the Academy, now established by regulation at 16 years, should be fixed by law at that term, and I think that the maximum should be 20 years. As to qualifications in other respects, it appears to me that the standard of requirements ought to be raised, and that the country is now prepared to demand from a youth of sixteen who aspires to a commission in the Army something more than the mere rudiments which are now prescribed, and even these are not rigidly exacted. It would not be unreasonable to require that the candidate shall be able to read English fluently, to write a legible hand, to spell correctly, to speak and write English grammatically, and to possess a good knowledge of English grammar, geography, and arithmetic. This is very little more than is now required; but, if this degree of instruction were rigidly exacted before admission to the Academy, the *personnel* of the institution would be much improved and the subsequent labors of cadets and officers lightened. If it were practicable to adopt a system of selection among the candidates from each district the above objects would be still better attained.

If the adoption of a more rigid system of preliminary examination should even exclude the candidates from some few districts, until these become sufficiently settled and improved to offer facilities for the requisite instruction, no great evil would result.

COURSE OF INSTRUCTION.

Having been recently appointed a member of a board of officers and others to revise the course of instruction at the Academy, and being at first prevented by sickness from attending the meeting of the board, I addressed to the War Department a communication giving some views on the course of instruction. This communication will be found among the archives of the board, to which I presume your Commission will have access, and to which I therefore refer you.

That board arranged the outlines of a course of instruction for five years at the Academy, to the consideration of which term they were confined by their instructions.

I concurred in the recommendations of the board with the exception of some not very important details as to the hours allotted for cavalry exercises. I do not, therefore, think it necessary to enter here into any further explanations on that subject, but I must express my opinion in favor of establishing the term of instruction at the Academy at *four* years instead of *five*.

Considering the age of admission, and the preparation in elementary studies which may be expected at that age, I think that sufficient extension may be given in four years to the course of studies appropriate to the Military Academy, and that it is not advisable to subject a young man for a longer term to the restraints and confinement incident to the station of a cadet at the Academy, and to the weariness of long-continued abstract study in the great variety of subjects embraced in the academic course.

"To learn a few things and learn them well" is a good rule in the instruction of youth; to produce an accomplished scholar in science, as in literature, much must be left to the individual exertions of the student, after his mind has received a proper direction from his early studies. In extending the course of study to five years, little addition has been made, or ought to be made, to the theoretical studies peculiarly appropriate to a military man. The course of English studies and Spanish has been extended, and it is proposed to devote more time to practical exercises.

The first-named subjects I do not consider very important, especially when regarded with reference to improved preparatory education, and, however important the other object may be, I do not think that it is advisable or practicable to combine a school of practice with the Military Academy. A graduate of the Academy should be acquainted with the elementary drill of the several arms, should be able to ride on horseback, and should have had an opportunity of seeing and examining the principal instruments of warfare and of science, of which the nature and use are explained in his books; but it is not to be expected that, immediately on leaving the Academy, he should be prepared to take charge of practical scientific operations, or even to assume the responsibilities involved in the command and administration of troops.

His previous education will have prepared him to acquire quickly the further instruction requisite for the performance of these duties, but under the most favorable circumstances, that instruction demands much more time than could be afforded to it at the Academy, if circumstances were at all favorable to its acquirement there, which I think they are not.

For young officers of infantry and cavalry, service with the regiments affords the best school of practice. For artillery officers the necessary facilities for practical instruction can and ought to be given at Fort

Monroe, and with the light companies of artillery. Young officers of Engineers, Topographical Engineers, and Ordnance must, in our Army, acquire their practical knowledge by serving with those who are capable of instructing them; and it is the duty of the chiefs of those corps to see that young men are not placed in independent and responsible situations until they have had proper opportunities for qualifying themselves for the performance of their duties.

With regard to the study of the Spanish language, which has been lately added to the course, it may be remarked that the special object of this study is to enable officers to *speak* the language for intercourse with our neighbors at the south. Without inquiring into the extent to which the instruction in Spanish has been carried hitherto, we may infer from experience with the French, to which a good portion of time has always been given at the Academy, how improbable it is that the cadets will acquire a facility in speaking Spanish. Those graduates who are sent immediately to the Mexican frontier will derive some advantage from their study of Spanish grammar; but a few months' residence among the people will give, even to those not so prepared, a greater facility in speaking the language and understanding it than they could acquire in a much greater time given to mere study. I do not, therefore, think it advisable to make any considerable sacrifice on other points for the sake of retaining the study of Spanish. The additional time would be better devoted to perfecting a knowledge of French.

In accordance with these views, I would modify the course proposed by the board for five years' study by reducing somewhat the course of English studies; omitting the Spanish language; giving less time to cavalry exercise, retaining enough to make good riders; limiting the instruction in practical engineering, and practical astronomy and geodesy to a few lessons in the use of tools and instruments. By this means, and a judicious arrangement of the programmes of studies, I believe that four years would furnish ample time for an excellent course of instruction.

In considering this part of the subject I need only refer to the political and economical considerations involved in it, which the Commission will no doubt duly consider.

As a part of the course of instruction hitherto not sufficiently attended to, I may mention the subject of gymnastic exercises, including swimming and boating. Time given to them during the encampment and in winter would be well bestowed, and the exercises would be regarded not as tasks, but as relaxation and amusement.

I have not mentioned one branch of inquiry embraced in the law under which the Commission is appointed, that of *discipline*, because it seems to be intentionally excluded in your letter to me.

Respectfully, your obedient servant,

A. MORDECAI,
Major Ordnance.

Lieut. J. C. IVES, *Topographical Engineer,*
Secretary Military Academy Commission.

A².

WASHINGTON, August 18, 1860.

SIR: The circular letter of the 18th ultimo, which the Military Academy Commission did me the honor to address to me, asking what changes

are, in my opinion, desirable in the organization and course of instruction at the Academy, was received on my return to Washington, after a short absence, and would have been answered sooner but for the pressure of office duties, which, with sickness in my family, have demanded most of my time, leaving little for other matters.

Even after so long delay, and after giving the subject presented much thoughtful consideration, I approach it with hesitation, and offer opinions concerning it with much diffidence. After so many years separation from the Academy, with no other knowledge of its present workings, its merits and its defects, than that derived from reports received at the Engineer Bureau, it is obvious that some of the opinions presented should be considered rather in the light of suggestions for the consideration of the Commission than the results of well settled convictions. It should be understood, moreover, that from this want of intimate knowledge of the present condition of the institution I have naturally referred back to what it was when I knew it better, and may not always have made fair allowance for its many subsequent improvements.

Before referring to particulars connected with the organization and course of instruction at the Academy, I would state most unqualifiedly that the institution which has advanced from small beginnings to its present condition through changes and improvements resulting from careful observation of its wants and defects on the part of its authorities, and which now so well fills the purpose of its establishment, should not, in my opinion, be subjected to any radical change. There may be, and I think are, some defects in details, both of organization and instruction, which I propose to notice; touching also upon some matters which, though regarded by many as faulty, and consequently as calling for change, should, in my judgment, be maintained as at present.

Treating first the subject of organization, I would say in reference to the Superintendent, that, laying aside as far as possible all feeling of corps pride, I have not been able to bring myself to the belief that the interests of the Academy would be promoted by widening the field of selection. Disturb the present law which confines the selection to the Corps of Engineers, and the range of choice can no longer be restricted. The position must inevitably, it seems to me, be put up to the competition of all branches of the service, whereby a wide door will be opened to political influence, which, has never yet entered into the question of selection of the head of the institution. This is conclusively shown by efforts of aspirants for the position of commandant of cadets, which is open to the Army at large. Theoretically, but little would be gained by such a change; practically, the result would often be disastrous. The institution always has been and always should be scientific in its character, and the selection of its head should be confined to the scientific branches of the service; but, as before remarked, this would be impracticable if any change in the present law were made; and that no such change is called for by the interests of the institution its present condition is the best proof.

While a change would, in my opinion, be attended with few or no advantages, difficulties and objections, other than those referred to, would be occasioned thereby, as for instance that of assigning a head to the Academy at Washington, to act as its organ with the Executive authority of the nation and with Congress. Now the Academy is represented by the Chief Engineer. Select a Superintendent from either of the other staff corps or the line, and where would this management be

lodged? I confess not to seeing the way clearly through such a difficulty. While much more might be said upon this subject, I leave it with a renewed expression of my sincere conviction that the wisest course for the well-being of the Academy which has accomplished so much is to leave the selection of Superintendent as now provided by law.

Commandant of Cadets.—This officer, the second in importance at the institution, has now by law, in addition to the command of the corps, with the care of its discipline, the duties of instructor in the departments of artillery, cavalry, and infantry imposed on him. Formerly he was commandant of cadets and instructor of infantry only, while the instruction of cavalry and artillery combined was under a distinct officer. Separate the artillery from the cavalry, making these distinct departments, and such organization would be far better, in my opinion, than that now established. That is also the opinion of all officers with whom I have spoken upon the subject. Some advantages no doubt attend the combination of all these branches of instruction under one head, but none which compensate, in my judgment, for the disadvantages resulting from loss of that zeal and the sense of responsibility on the part of the heads of these individual departments which the old organization secured. I therefore recommend a return to the system established prior to 1856, adding thereto a cavalry department distinct from that of artillery, to which an officer from one of the mounted corps should be attached as its head. Under such an organization the commandant of cadets should be an officer of infantry, and the instructor of artillery an officer of that arm.

Professors.—To the number of professors as now established by law should be added another to relieve the chaplain from a portion of the duties assigned to his now overburdened department, leaving him, in connection with his duties as a clergyman, the teachings of moral science alone; or, still better, perhaps, relieving him from all academic functions. The functions of pastor and professor are, to some extent, incompatible, since it is not in the nature of things that the former can hold the true relations to the cadets when obliged at the same time to perform towards them the duties of the latter in matters of discipline. At any rate, he should be relieved of a portion of his academic duties, which now exceed what can be efficiently performed by a single individual.

It is also a matter worth the serious consideration of the Commission, whether the professors, who may hereafter be selected from the Army, should not retain their commissions and return to service under them at the expiration of a certain term of years, which should never be exceeded, but which, for sufficient reasons, might be diminished in any individual case. This would have the effect to infuse new spirit into the various departments; while returning to the Army at intervals officers who will carry with them the information acquired during their service at the Academy, and give the means of freeing the institution of such as may from any cause become inefficient.

Assistant Professors.—At present each department of instruction, except the Spanish and practical military departments, is entitled by law to one and only one assistant professor, who receives as such the pay and emoluments of a captain; while all the remaining instructors, styled acting assistant professors, are drawn by detail from the Army, and receive their Army pay and allowances only. I think the true interests of the Academy would be promoted by providing by law for a certain number of assistant professors to each department, equal in

each case to the maximum number that can ever be needed ; that these assistant professors shall be officers of the Army detailed for the duty ; that they shall receive the pay and emoluments of captains ; and that their term of service as such shall not exceed four years. Zealous and willing instructors would thus be secured to the Academy, which is not always the case now ; the vexed question of rank at the Academy would naturally be settled according to Army grade, and officers would return to their Army duties after a not too long separation from them, much improved by their tour of service at the institution.

Appointment of Cadets.—In case the five years' term of study be retained, would it not be desirable to change the limits of age within which the candidate is eligible—from sixteen to twenty-one to fifteen and twenty ? The age at graduation would then be as formerly, under the four years' term, viz : from twenty to twenty-five ; thus removing one of the objections to the present length of course. Again : assuming the impolicy, and, what is probably true, the impracticability of raising the present legal standard of requirements necessary to admission, would it not be possible to secure a higher order of acquirements by opening the door of admission to competition instead of leaving the selection of candidates, as it now practically is, to the Representatives in Congress ? Let, for instance, the course often suggested be followed, of permitting the Representative to nominate a certain number—say five, or even more—who shall undergo an examination at some place within the district or State, the appointment being given to the one found best qualified upon such examination. This would secure better appointments than the present mode ; give merit unsupported by influence a better chance for admission, and increase somewhat the number of graduates, as fewer would then fail in mastering the studies of the course.

COURSE OF INSTRUCTION.

I am not prepared to say that any of the subjects taught at the Academy should be omitted, though many of them may, no doubt, be pruned somewhat without injury to the general course, thus giving an opportunity for the expansion of others requiring it, or, at any rate, for relieving the cadet from some of the intense mental strain he is represented to be now under. What subjects should be cut down and what enlarged can only be fully determined after a more careful and detailed investigation than I can give ; still, I may remark, that the department most requiring reorganization is that of English studies. That this has always been the most defective of all, the faulty education of the graduates in their mother tongue, as compared with their other acquirements, abundantly shows. Much of this is due to the lack of time for a proper teaching of the subject, and part to a faulty programme, for neither of which should the professor be held responsible. While I am sensible of the defects in this particular department, I do not see clearly how to remedy them. Much might be done toward it by a division of the ethical and English department, as before suggested, and by the introduction of a more extended course of composition, and perhaps declamation, if time can be found for the purpose.

I have never been satisfied that too much time was not devoted to artistic drawings, as distinguished from professional. The large majority of the cadets acquire really but little of the art, and that little is not enough to be of much value in after life. I am sure this is my own case, and I believe it to be that of at least nine out of ten of the graduates. Any time which can be properly taken from this course

might be most advantageously devoted to an enlarged course of English studies.

The time devoted to practical instruction I would not increase. The institution is and should always remain essentially a theoretical one, only enough of their application being introduced, in connection with the studies, to illustrate them. The cadet on graduation is not supposed to be a thorough practical officer, but to be fitted by his education to become one. His whole after career in the Army should be a school for the application of the principles learned at the Academy; and if further opportunities for this be needed than the one afforded in ordinary service, they may be better provided by camps of instruction and schools of practice than at West Point.

Length of course or term.—Even supposing the subjects now embraced in the course to be cut down to the lowest admissible extent, and I should still remain in the opinion that the present term of five years should not be shortened. Taking the studies as they existed when I was a cadet, and four years was not too much to devote to them. Since that time so much has been added to the course, of matter which should not on any account be omitted as to render an additional year imperatively necessary. Return to the four years' term, and some of the subject must be dropped, or the cadet, who, it is now claimed is too heavily burdened with study, must be still more overtasked. That five years is not too much for the education of the Army officer would seem to be apparent when we consider the time devoted to fitting young men for other professions. Several years are spent in preparation, four years more are devoted at college to the course of general education, and the study of the profession follows. Ten years in all would not exceed, perhaps, the time thus spent; and if this is not too much, as by general consent it seems not to be, then surely five years is not too much for the military profession, which is not more easily acquired than others. All the arguments presented by the advocates for a return to a course of four years have failed to satisfy me, and I should regret to see the present term of five years disturbed.

Demerit.—In regard to the system of demerit, which has occasioned so much discussion, I am under the opinion that no radical change should be made from that laid down in the Academic Regulations of 1857. The weight given to conduct in that code, in making up the standing of the cadet, and particularly his graduating standing, should not be diminished. A prompt attention to duty, a strict obedience to the lawful orders and requirements of the authority placed over him, are as important qualities in the soldier, and should count as much as a knowledge of electrics and chemistry, or of ordnance and the science of gunnery, to all of which equal importance is attached in making up the final standing of the cadet. It follows, from these views, that the series of regulations in reference to demerit, issued in April last, should be rescinded. The mischievous influences they exert can be so readily ascertained, by reference to the local authorities, as to render any explanations unnecessary. Suffice it to say that they must have originated in a misapprehension of the system of demerit as it exists, and cannot, therefore, be successfully grafted upon it.

Advancement of cadets.—It is very important, in my judgment, that it should be provided *by law* that no cadet should be advanced to a higher class, except at the annual examination, and then only by his being pronounced proficient by the Academic Board. As it is now there is nothing to prevent political or other influences from being successfully exerted in advancing a cadet to a higher class, who has been declared

"not proficient" in his studies by the Academic Board. Every graduate of the Academy must feel an interest in the institution to which he owes so much, and will be pardoned for watching over its interests with a jealous care. Hence I feel bound to bring this subject to the attention of the Commission, and to ask its influence in obtaining the enactment of a law of a character so salutary as that proposed.

I have the honor to be, very respectfully, your obedient servant,

H. G. WRIGHT,

Captain of Engineers.

Lieutenant J. C. IVES, *Top. Eng.,*

Secretary Military Academy Commission.

B².

NEW YORK, August 21, 1860.

SIR: I inclose herewith a letter from Captain Cullum, of Engineers, in reply to your letter of the 18th, requesting him, on the part of the United States Military Academy Commission, to state "what modifications or changes in the organization and course of instruction at the Military Academy are, in his opinion, desirable."

Having been in frequent communication with Captain Cullum during the time he has been engaged in preparing this paper, I have concluded I can do no better than to express my concurrence with his views with slight qualification.

The main feature of his paper consists in the recommendation that *all* the professors be officers of the Army. As *most* of the professorships are now filled *from* the Army, there can be no doubt that competent professors can be found in officers of the Army, and, if so, that many advantages, both to the Academy and the service, accrue from their retaining their commissions.

But in reference to *two* of the professorships named, viz, of "English literature" and of "modern languages," it may be doubted whether the best talent for these branches could always be found in the Army; and hence I should object to its being made *obligatory* that these professors should be Army officers. With the above proviso, I concur in Captain Cullum's recommendations as to *organization*.

I have never had occasion to study so thoroughly the "course of instruction" at the Academy as Captain Cullum has done; but so far as I feel capable of judging, I consider Captain Cullum's proposed course and programme of studies excellent.

In addition to the above paper of Captain Cullum's, I inclose a joint answer to the several queries proposed by the Commission.*

I am, very respectfully, your most obedient,

J. G. BARNARD,

Major of Engineers.

Lieutenant J. C. IVES, *Topographical Engineers,*

Secretary of the U. S. Military Academy Commission.

C².

NEW YORK, August 18, 1860.

SIR: In reply to your letter of the 18th ultimo, I have the honor to submit, herewith, my views, as requested by the Commission instituted

*Subjoined and marked D².—*Secretary*

by the act of Congress of June 21, 1860, upon what modifications or changes in the organization and course of instruction at the United States Military Academy are desirable "to secure to the Army officers best qualified to perform their various duties, and to meet all their responsibilities."

These interrogatories embrace so wide a field that, in the limited time I can spare from my other duties, I fear I can do but very imperfect justice to a subject so important to the honor of the Army and the welfare of the nation.

ORGANIZATION OF THE MILITARY ACADEMY.

Inspector.—The chief engineer, since April 7, 1818, has been *ex officio* inspector of the Academy, and to him, under the orders of the President or Secretary of War, has been confided the general administration and direction of the institution. That he has executed his trust with fidelity, zeal, discretion, and ability, the present eminence of the Academy answers more emphatically than any additional arguments I can urge for retaining the inspectorship as now wisely established.

Superintendent.—The act of March 16, 1802, created the Military Academy, after the blood-bought experience of our revolutionary struggle, in which we so suffered for the want of educated scientific officers. By that law, matured by the patriotic soldiers and statesmen who had won our independence and established us as a nation, it was provided "that the principal engineer, and in his absence the next in rank," should have the superintendence of the Military Academy. Since that day the expediency of thus continuing the superintendency has been warmly discussed in and out of Congress, and the conservative councils of our legislators have deemed it prudent and wise to retain a system which has produced such prolific fruits of excellence. I could assign most cogent reasons why the superintendency should still be confined to the Corps of Engineers; but, belonging myself to that branch of service, it perhaps is more becoming not to press them upon your attention at this time.

The functions of the Superintendent should extend, I think, as now, to the immediate government of the institution, and the direction of all academic duties and field exercises.

Professors.—These, in my opinion, should all be officers of the Army, detailed, as a general rule, from young captains, and serving (with the local rank of majors) as professors, when not incapacitated by ill-health or other disqualifying causes, till they reach the full rank of majors, when they should be returned to their corps or regiments. The effect of this system would be to more thoroughly preserve the Academy as a *military* institution, identify it closely with the Army, infuse into it more completely the *esprit de service*, create an ambition in officers to fit themselves for these honorable positions, and to enrich every arm with the experience and knowledge of the retiring professors. This plan would obviate all difficulties of command, disputes as to rank with civil professors, and inspire cadets with a higher sense of military obligation and respect for their superiors. By the present system, and without provision of law for retiring aged or infirm professors, the whole instruction of departments may be paralyzed or thrown into the hands of inexperienced assistants. By the proposed system, the professorships would be continually recruited by the youthful energy and ambition of new incumbents, who, after expending ten or fifteen of the best and brightest years of their lives, would vacate their seats for other aspirants for distinction and usefulness.

Academic Board.—This should consist of the Superintendent and the heads of the most prominent departments of instruction. The board, as at present constituted, is too large for working purposes.

Military Staff.—This should be composed as now; but the quartermaster having charge of the construction and repairs of public buildings, roads, &c., should be an experienced subaltern of engineers.

Department of Engineering.—A captain of the Corps of Engineers should be the professor, and be assisted by two or three subalterns of engineers.

Department of Natural and Experimental Philosophy.—A captain of the Army should be the professor, assisted by two or three lieutenants.

Department of Mathematics.—A captain of the Army should be the professor, assisted by five or six lieutenants.

Department of Chemistry, Mineralogy, and Geology.—A captain of the Army should be the professor, assisted by one or two lieutenants.

Department of English Literature.—The chaplaincy should be separated from the professorship of "geography, history, and ethics," and the head of the latter department be called the Professor of English Literature. He should be a captain of the Army, assisted by three lieutenants.

The separation of the chaplaincy from the professorship has long been urged for many good and substantial reasons; but it is sufficient to say that no one man, whatever may be his talents and industry, can give the thorough and varied instruction required in the performance of his academic charge, and, at the same time, attend thoroughly to the parochial duties of a military post with over a thousand souls.

Department of Drawing.—A captain of the Army should be the professor, assisted by two lieutenants.

Department of Modern Languages.—The professorships of French and Spanish should be united under one head, to be styled Professor of Modern Languages, who should be a captain of the Army, assisted by three or four lieutenants.

Department of Practical Engineering.—A captain of the Corps of Engineers should be the professor, assisted by one first and two second lieutenants of engineers. He should also command the engineer troops stationed at West Point, having his assistants as company subalterns.

Department of Artillery.—This should comprise ordnance, gunnery, and artillery tactics, instead of being divided, as now, between two departments. A captain of ordnance or artillery should be the professor, assisted by one lieutenant of artillery and one of ordnance.

Department of Infantry.—A captain of infantry should be the professor, assisted by four first lieutenants of infantry.

Department of Cavalry.—With the limited instruction I would propose in this department, the head of this department should be a first lieutenant (with the local rank of captain), with an assistant, both being taken from the mounted corps.

Commandant of Cadets.—The senior officer of the four military departments of practical engineering, artillery, infantry, or cavalry, to be the commandant, and have charge of the military police, discipline, and administration of the corps of cadets, and the command at reviews, drills, &c., when two or more arms are united.

Department of Small Arms and Military Gymnastics.—A first lieutenant of the Army (with the local rank of captain), to be instructor, with an assistant, if necessary.

Department of the Science of War.—This, as it ought to have much

greater development, should be an independent department, and have a captain of the Army for professor, with an assistant, if necessary.

Cadets.—The average number of vacancies in the Regular Army for the last twenty-five years has been between forty-eight and forty-nine. The average number of graduates, with a five years' course of instruction, will not exceed thirty eight or thirty-nine. To supply this annual deficiency of about ten, I would propose to provide by law for the appointment of one cadet for each member of the Senate. Such an increase will require no additional expense for public buildings and instruction. The sum of \$25,000 would be ample to cover their annual pay and other expenses.

COURSE OF INSTRUCTION AT THE MILITARY ACADEMY.

The Commission has read the proceedings of the Board instituted January 5, 1860, by the War Department for revising "the programme of instruction at the Military Academy," of which I was a member; and, as my views are therein pretty fully indicated, it is unnecessary now that I should enter into detail upon the subject.

In general terms, I may say that I would deeply deprecate any radical departure from the present course of instruction, founded in 1817 by that able and distinguished soldier, Colonel Thayer, of the Corps of Engineers, the justly called "Father of the Academy," and continued, with slight modifications, till now—near half a century. The Academy, under this admirable instruction, has supplied the nation with nearly two thousand accomplished officers, of which any army might well be proud; has filled every arm of service with talent, efficiency, and integrity; has materially aided in successfully conducting two great wars, and extending our national domain; has perpetually pushed the wild savage from our borders and been the pioneer of advancing civilization; has constructed and armed our fortifications, improved our harbors, lakes, and rivers, defined our boundaries, surveyed and lighted our coasts, and explored the length and breadth of our land; has given to our militia vast numbers of valuable officers, and to our colleges able presidents and professors; has furnished distinguished civil engineers, who have bound our confederated States together with a network of railways and canals; has supplied valuable city, State, and government functionaries; has improved our workshops and the culture of the soil; has added its mite to the counting-house, the bar, and the pulpit; and through the contributions and text-books of its graduates, has greatly elevated the scientific standard of most of the educational institutions throughout our country, and even extended its influence abroad.

Where there is so much excellence matured for years by the thought and fostering care of so many wise and conscientious men, who have shaped the Academy's destinies, it is certainly the part of prudence to leave well enough alone, and not venture upon untried schemes which may return to plague the inventors.

It has been often urged that it was unnecessary to educate our infantry and cavalry so far beyond their wants as officers of those arms, and the contrary practice of foreign nations has been constantly cited. To say nothing of the advantages of every officer having a liberal education, and the danger of cadets intentionally gravitating to the lower parts of their classes with a view to obtain infantry or cavalry commissions in two or three years, instead of toiling four or five years for those in the scientific corps, no comparison can be made between our own and foreign services. With our small Army isolated at frontier posts

it may often occur, in the absence of officers of other corps, that the infantry and cavalry may be called upon to construct defenses, make surveys, and serve batteries. In our contest of 1812-15 with Great Britain, and again in the Mexican war of 1846-48, an interchange of duties of different arms became indispensable; and in any future struggle with a great power infantry and cavalry will be mainly supplied by the militia, while all our regular officers will be called upon to perform staff duties, and those of artillerists and engineers.

Another objection, often urged, is the too exclusive scientific training of cadets. For the fully developed man, doubtless, every faculty, moral as well as intellectual, should be educated, but in a course of instruction of four or five years that is impossible; and the government, in establishing the Academy for a special service, has decided the question that the ornamental shall yield to the useful. However, this defect ought to be remedied as far as practicable, and without trenching upon the proper province of the institution; even the addition of light studies or exercises may often stimulate the brain instead of producing further mental exhaustion.

A strong tendency has been shown by a portion of the Army, of late years, to make the Academy more of a drill school, and partake less of the character of a high seminary of learning for accomplished officers. I think it should be steadily kept in view that West Point cannot accomplish everything in four or five years, and that in the attempt to combine an elementary school, a scientific academy, a high university, and a school of application for all branches of service, the institution will be crushed by the accumulated weight. The object of the Military Academy should be to educate scientific soldiers of all arms, giving them just enough of practice for thorough illustration and healthful exercise. The constant attempt to make the institution suit the special views and wants of one or more branches of service should be resisted. The Polytechnic School, said Napoleon, was "the hen that laid him the golden egg." Let us not, in our pursuit of excellence, modify the great captain's apothegm by repeating the experiment of the goose and the golden egg.

Descending from generalities to particulars, I will make a few remarks upon the various branches which I think should constitute the course of instruction at the Military Academy.

Mathematics.—This broad basis of a scientific education embracing algebra, geometry, trigonometry, mensuration, descriptive geometry; shades, shadows, and perspective; analytical geometry, differential and integral calculus, and surveying, is very thoroughly taught at the Academy, and requires no modification, except, perhaps, the introduction of a few more practical exercises illustrative of the principles taught.

English studies.—With the present low qualifications for the admission of cadets to the Academy, some elementary English studies are indispensable, but I would limit them to English grammar, geography, composition and declamation, rhetoric, and history; grammar and geography to be taught as now. To speak and write well are necessary accomplishments of every well-educated gentleman, and to none more than to officers of our Army, who may be called upon to address troops and other assemblages, and to make reports and other official communications which generally find their way into published documents. The rules of rhetoric it would be advantageous to read, but I think too much time is now bestowed on their study. History is a great and most important subject, requiring a lifetime to master. In the brief period now allotted to its study at the Academy, I would

suggest whether it could not be better taught by lectures to the first class, giving the great outline of the rise, progress, and decline of empires, and leaving details to be filled up by after reading. In the attempts to learn so many particulars in a limited time it strikes me that history becomes a barren chronological table, to be forgotten almost as soon as learned.

French and Spanish languages.—The great object in the study of French at the Academy is to enable cadets and graduates to read text-books and professional works. The admirable system now pursued at West Point accomplishes this object as perfectly as it is possible within the allotted time. If practicable, this course should be extended, to enable cadets to speak the language with facility, it being the common medium of communication with nearly all educated foreigners.

The object to be attained in the study of the Spanish being mainly to speak the language in the intercourse of our officers with the inhabitants of our newly acquired possessions of New Mexico and California, its study should be deferred to the last year, that the graduate may freely continue the practice of speaking it when ordered to our possessions acquired from Spain or Mexico. Another object attained in putting it in the first class course is its further separation from French, which must necessarily be taught in the junior classes to be available in the study of text-books in the senior classes. Two foreign languages must become somewhat intermingled in the minds of learners, it appears to me, if pursued simultaneously.

Drawing.—The vast improvement made in drawing at the Academy of late years, and the beautiful productions of cadets' pen, pencil, and brush at the present day, make me hesitate in suggesting any modifications. The practice recently adopted of sketching landscape and topography from nature is a great improvement. The learning to draw from architectural models is also a great addition to the present system, which it would be of the highest value to extend to the delineation of machinery, ordnance, &c.

Natural and Experimental Philosophy.—This course should embrace, as now, the mechanics of solids and fluids, acoustics, optics, and astronomy, and, in addition, heat and electrics, now in the chemical course. This is one of the most important branches of instruction at the Academy; but, notwithstanding the ability of the professor, for some cause cadets do not get a clear and comprehensive understanding of the subjects taught in this department. This subject engaged the anxious thoughts of the entire board for revising the "programme of instruction at the Military Academy" during its sessions last winter and spring; and, after mature deliberation, it was deemed advisable to give cadets instruction first in more popular explanations of the phenomena of natural and experimental philosophy, similar to Ganôt's "*Traité Élémentaire de Physique*," or Silliman's "*First Principles of Physics*," and afterwards to require only of the upper half of the class the more difficult study of analytical mechanics, omitting the mechanics of molecules. This, unfortunately, involved going twice over the subject of mechanics with the higher sections of the class in natural philosophy, but, with the present available text books, there was thought to be no alternative. Experiments with the admirable apparatus of the Academy should, I think, be made more frequent to illustrate phenomena, and the cadets should be required to work out numerous examples of those applications which are most likely to be useful to them as officers of the Army.

Chemistry.—This course is well adapted to the objects of the Academy,

but I think a little more time should be given to metallurgy and the chemistry of agriculture and food.

Mineralogy.—This is now admirably taught, and cannot well be improved.

Geology.—As much theoretical geology is taught as is necessary, and a more practical knowledge, though desirable, cannot well be obtained at the Academy without more complete models and specimens. An addition of a short outline of physical geography is very important in this course.

Civil and Military Engineering.—This course, as recently enlarged, embraces all elementary principles of engineering, and is as complete and comprehensive as is necessary to enter upon the duties of a junior officer of engineers or of other arms.

Ethics.—The instruction in ethics could be given in a few lectures by the professor to embrace all that is essential to cadets.

Law.—Constitutional, international, and military law should continue to be studied, and the time now given is sufficient.

Practical Engineering.—This course should embrace about fifty practices in preparation of siege materials, sapping, mining, pontooning, tracing and profiling field works, surveying military positions, itineraries, reconnoissances, use of instruments, and modeling to a scale, in sand, of all siege works, field entrenchments, batteries, &c.

Practical Astronomy and Geodesy.—A short course of practical astronomy as geodesy would be a very valuable addition to the instruction at the Military Academy, and would relieve graduates of the embarrassment now felt when required to make surveys and explorations in the field.

Artillery.—This course should embrace ordnance, science of gunnery, and artillery tactics, under one head, instead of two, as at present. The theoretical part is now receiving its proper extension, and, taking into consideration that we have a school of practice at Fort Monroe, it is a question whether some of the artillery drill could not be omitted.

Infantry.—The amount of infantry drill at West Point is excessive and should be diminished, to give more time to military gymnastics, use of small-arms, &c., which are quite as essential to the good infantry soldier as the precision of drill.

Cavalry.—It is of the first importance to make every cadet a good horseman, not only to do his duty efficiently as an officer, but as the most invigorating exercise promotive of health, without which no one can pursue advantageously the arduous course of study at the Academy. I would not extend the course at West Point beyond equitation and the study of cavalry tactics, but would leave all veterinary art and cavalry drill to be learned at the school of practice at Carlisle.

Science of war.—The great object of the education at the Military Academy, which is to form accomplished officers, cannot be fully attained, it appears to me, without a more thorough knowledge of the science of war. Now, it is made subordinate to almost every branch of instruction at the Academy, and even "veterinary science" is made the rival in importance of the "science of war," twenty-four lessons being given to the former, and but eight to strategy, eleven to grand tactics and organization, and fourteen to outposts, or *petite guerre*. In all the important military academies in Europe, particularly at St. Cyr and the schools for the staff and special arms, great attention is paid to this subject. No one want is as conspicuous at West Point, and nothing would tend to give cadets more elevated views of their profession, and stimulate them to military reading after graduating,

than a well digested and complete course on the science and art of war. Such a course should be pursued in the last year, after all the preliminary studies of the tactics of the special arms—gunnery, engineering, &c., of which it is the sequel—have been completed. Having paid some attention to the subject, I will submit, if desired by the Commission, a programme of such a course as I would deem appropriate.

With these general remarks on the studies, &c., of each department of instruction at the Academy, I append below, in tabular form, a general view of how these various subjects can be most advantageously studied in five years. Though I should be glad if the course at West Point could be reduced to four, I do not see, without overtaxing cadets, omitting some essential studies, or raising the standard of admission, how a five years' course is to be avoided.

In the following programme I have endeavored to omit all superfluous subjects, to avoid overtaxing cadets with studies, to intersperse them with healthful military duties, to illustrate them by practice, experiments, and exercises, and to prevent confusing their minds by generally limiting their recitations to but two each day.

Programme of a course of studies at the United States Military Academy, as proposed by Captain George W. Cullum, Corps of Engineers.

FIRST YEAR—FIFTH CLASS.

Subjects.	Time employed.	During what periods.	Remarks.
Mathematics—			
Algebra	8 to 11 daily	Sept. to Jan ..	These subjects to be taught as at present, and each cadet to have 40 examples in geometry, and 60 in trigonometry and mensuration.
Geometry	do	} Jan. to June.	
Trigonometry	do		
Mensuration	do		
Descriptive geometry	do		
English studies—			
Grammar	11 to 1 and 2 to 4, daily, except Saturdays.	Sept. to Jan ..	Care to be taken to prevent plagiarism. As now taught.
Geography	11 to 1 Tuesdays and Thursdays.	Jan. to June..	
Composition	} 11 to 1 on Saturdays, alternating.	} Sept. to June	
Declamation			
French language	11 to 1 and 2 to 4 on Mondays, Wednesdays, and Fridays.	Jan. to June..	
Use of small arms	} 11 to 1 and 2 to 4, except Saturdays.	} Sept. to June.	Fencing, bayonet exercise, &c.
Military gymnastics			
Drill and parade	4 to sunset		Drill of one hour, when weather permits.

SECOND YEAR—FOURTH CLASS.

Mathematics—		
Descriptive geometry.....	8 to 11 daily.....	} Sept. to Jan. .. } } Jan. to June. .. } } Sept. to June. .. } } .. do } } }
Shades, shadows, and perspective.....	do	
Analytical geometry.....	do	
Dif. and int. calculus.....	do	
Surveying.....	do	
French language.....	11 to 1, except Saturday	} Sept. to June. .. } } .. do }
Composition.....	11 to 1, alternating on	
Declamation.....	Saturdays.	
Drawing.....	2 to 4 daily.....	
Military gymnastics.....	4 to 5 daily.....	} Nov. 1 to } Mar. 15.
Use of small arms.....	do	
Drill and parade.....	4 to sunset.....	
		} Topography, from models and nature; figures with pen and ink, and landscape with lead pencil. Exercise of half an hour of half of class at a time. Drill of one hour when weather permits.

PROGRAMME—Continued.

THIRD YEAR—THIRD CLASS.

Subjects.	Time employed.	During what periods.	Remarks.
Natural and experimental philosophy—			{ These subjects to be taught by text books which will give pupils clear and comprehensive views of all phenomena, and the instructors to fully illustrate them by lectures and experiments. The application of the higher mathematics to be required of the upper half of the class to the greatest extent of which they are capable, within the allotted time.
Mechanics of solids	8 to 11 daily	} Sept. to June.	
Mechanics of fluids	do		
Acoustics	do		
Optics	do		
Heat	do		
Electrics	do		
Astronomy	do		
Chemistry—			{ The same course as now studied, with the addition of more metallurgy, and chemistry of food and of agriculture, and experiments in laboratory, as far as practicable.
Inorganic chemistry. . . }	2 to 4 every other day	do	
Organic chemistry. . . }			
Chemistry of food			
Agricultural chemistry }			
Drawing	2 to 4 every other day, alternating with chemistry.	do	Landscape, with brush, and from nature; architectural and machine drawing from models.
Composition	11 to 1 on Saturdays	do	The practice to be for each cadet to read aloud some chapter from an author (selected at the moment by the instructor), which shall be the theme of the cadet's composition, to be at once written in the recitation room.
Equitation	11 to 1 alternate days	do	On the same days with drawing.
Drill and parade	4 to sunset		Drill of one hour, when weather permits.

FOURTH YEAR—SECOND CLASS.

Engineering—			The present course as now studied, with the omissions proposed by the professor.
Civil engineering	8 to 11 a. m. daily	Sept. to Jan. ..	
Military engineering ..	do	Jan. to June ..	The same course as at present studied, adding a brief outline on physical geography.
Mineralogy	11 to 1 p. m. every other day.	Sept. to Jan. ..	
Geology		and during the month of May.	
Physical geography			
Infantry tactics	2 to 4 p. m., every other day.	Sept. to Jan.	As adopted for the infantry of the Army.
Cavalry tactics			As adopted for the cavalry of the Army.
Ordinance	2 to 4 p. m., every other day.	Jan. to June.	The course as proposed by the present instructor of ordnance and gunnery.
Gunnery			As adopted for the artillery of the Army.
Artillery tactics	do	do	As adopted for the artillery of the Army.
Equitation	2 to 4 every other day.	Sept. to June.	Alternating with tactics, ordnance, &c.
Drill and parade	4 to sunset		Drill of one hour, when weather permits.

PROGRAMME—Continued.

FIFTH YEAR—FIRST CLASS.

Subjects.	Time employed.	During what periods.	Remarks.
Practical engineering.....	8 to 1 p. m. (except Saturday), alternating.	{ Sept. and May.	{ Half the class alternate days. Do. do.
Practical astronomy and geodesy.....			
Science of war—			
Composition of armies	8 to 11 (except Saturdays) daily, from Oct. 1 to January, and every other day from January to May 1.	{ Oct. 1 to May 1.	{ Until a proper course on the science of war can be prepared by the professor, the instruction must necessarily be by lectures.
Grand tactics.....			
Petite guerre.....			
Strategy.....			
Campaigns.....	8 to 11 a. m. on Saturdays.	{ Sept. to June	{ Thirty lectures by the professor. Four lectures by the professor.
History.....			
Moral science.....			
Law—			
Constitutional law.....	8 to 11 a. m. (except Saturday) every other day.	{ Jan. to May 1.	
International law.....			
Military law.....			
Spanish language.....	2 to 4 daily.....	Sept. to June.	Particular attention to be given to speaking.

Cadets of the first class to serve as officers and instructors, by regular details, at engineer, artillery, infantry, and cavalry drills, and in teaching military gymnastics and use of small arms. Each member of the class to have equal opportunity of instruction.

There are many other points upon which I have not touched, but, with the pressure of other duties upon me, I have not time to go into their discussion.

The questions propounded by the Commission, in your letter of the 23d ultimo, I will answer in another communication, in a few days.

Very respectfully, your most obedient,

GEORGE W. CULLUM,
Captain, U. S. Engineers.

Lientenant J. C. IVES, *Top. Engineers,*
Secretary Military Academy Commission.

D².

NEW YORK, August 21, 1860.

SIR: In answer to your letter of the 23d ultimo, we submit the following replies to the interrogatories of the Commission:

“Question 1. What modification, if any, of the present mode of assigning cadets of the United States Military Academy to corps or arms would, in your opinion, be better adapted to the purpose of securing to each branch of the science the highest special qualifications, and to the Army the greatest efficiency?”

Answer. It is believed that no material modifications of the present system can be made without injurious results. The mode which has been practiced since the course of instruction was organized on its present basis has proved a powerful source of emulation, and gives the requisite stimulus to exertion, while it makes quite as much distinction of the peculiar talents and capabilities of cadets as practicable.

Scientific studies form the basis of our academic curriculum, and it is only those who have the talent for and are most proficient in such studies who occupy the highest places in their classes. Hence the selection, by this scale of merit, for the different corps or arms in the order in which the several branches of service involve the application of science, military or civil, affords as near an approximation to the desired object of securing “the highest special qualifications” as is believed practicable, while every graduate of the Academy will bear ample testimony to the active emulation it excites. Competition for

the higher prizes or choice of professions prevails in all the great military academies of Europe, and to this mainspring is due their excellence. The competitive system has given the Polytechnic School of France its world-wide reputation, and to our own Military Academy much of its just celebrity.

Doubtless special cases of individual aptitude may be found which the mode in question does not sufficiently distinguish. This, however, is the exception, and no mode can be devised which shall not have its exceptions. Genius, through indolence, may never ascend at the Academy, but indolent genius would rarely attain excellence in the Army or elsewhere. If quickened after graduating, and showing a decided aptitude for any particular branch of service, that genius will manifest itself and overleap all obstacles, though the supposition be admitted that the academic rule does not recognize it. When no such decided genius exists, that system is best which, while it takes sufficiently into consideration the scholastic attainments and mental constitution, stimulates each individual to do his best in the particular corps or arm to which he is assigned.

But whatever may be thought of the merits of the mode adopted at the Academy, it is believed that any modification which should attempt to distinguish and secure special qualifications by deferring the assignment to corps and arms, and making the selection the result of a post-academic period of service, would be practically a failure in all that it attempted to accomplish during such period. This innovation would entirely destroy emulation at the Academy by postponing its reward to a remote period *after* graduation, and rendering uncertain the fruits of immediate exertion. The youthful mind cannot be made to look far in advance; its best incentive is the prospect of immediate results, and all experience has proved that the intrinsic value of study and its prospective advantages are an adequate stimulus to every school boy. The system of selection, according to supposed aptitude, has been fully tried in most of the staff branches of our service, and we would frankly ask: Has it produced abler men or better soldiers than those assigned to corps or arms upon their graduation standing at the Academy?

It is possible that the mode of making up the "general merit" of graduates at the Academy might be somewhat modified to more surely guarantee the assignment of the first honors in classes to the highest talents and best-developed minds. For instance, it may be a question whether constitutional, international, and military law, or the French language should be on an equal footing with cavalry tactics, equitation, and veterinary art. Such considerations, however, apply only to the *application* of the system, which, in itself, is admirable, and, in our opinion, secures the welfare of the Academy and the best interests of the service.

With these views we would most earnestly urge that there be made *no* "modifications" of the present *mode* of assigning cadets of the United States Military Academy to corps or arms, believing, as we do, that it is admirably "adapted to the purpose of securing to each branch of the service the highest special qualifications, and to the Army the greatest general efficiency."

Question 2. To what extent, if at all, would it be advisable, in your opinion, to require officers to serve in different corps or arms?

Answer. We have some doubts as to the purport of this question. If it is asked whether officers of different corps or arms had better do duty appropriate to their own branches of service, with troops in the field, we would certainly answer yes; but, if the question is whether

all graduates of the Academy had better perform tours of duty with all corps and arms before being assigned to their permanent positions in the Army, we would emphatically answer no.

Doubtless, to the professional soldier, all kinds of military service are valuable, and proficiency in the special requirements of the corps and arms would be an important addition to proficiency in his own branch of service, but our aspirations must necessarily be regulated not by what is invaluable and desirable, but by what is attainable and practicable. We have aimed, in constituting our Military Academy, at what no European nation has accomplished, viz: To furnish our whole Army with a body of thoroughly educated military men, by instructing every pupil of the Academy in all branches of scientific and military knowledge, regardless of the corps or arm in which he may serve. But, in thus elevating the standard of instruction for the whole Army, let us not incidentally lower the standard of attainments for the scientific corps and arms, which we aim *too* at having equal to any in the world. There are no professional pursuits in life which demand more thorough scientific knowledge and constant experimental practice than those of the higher branches of our service.

In artillery, the form and construction of ordnance, for the greatest flight of projectiles, and the minimum strain of the gun, involve the highest applications of science. To improve the means of warfare, upon which victory so depends, is no longer trusted to the uneducated mechanic, but is made the duty of the scientific soldier.

The engineers are called upon not only to devise our system of defenses, and to construct our fortifications (functions involving the highest application of the exact sciences, and a knowledge of every branch of the art and practice of war), but, at the same time, they must be civil as well as military engineers, for on them also devolve the construction of roads, bridges, harbor improvements, aqueducts, light-houses, and public buildings of every kind, and only by the practice and unremitting study of a *life* can they succeed in mastering their exacting profession.

The Academy prepares the officer by a high scientific education, and by sufficient general instruction in the specialties of all corps or arms, to enter at once upon his specific duties. It is most desirable that, while this knowledge, general and special, is still fresh, and while his mind is pliable and *teachable*, he should enter upon the practice of his special corps or arm.

Service with troops in the field, particularly with army corps in active warfare, is, doubtless, highly improving to the military man, to whatever corps or arm he may belong. Interchange of service could, however, only be contemplated in time of peace, and it is believed that no sufficient advantage would accrue to the staff corps or artillery by their officers serving in the infantry or cavalry regiments (and *vice versa*) to compensate for the incidental and unavoidable evils. In a recent war with Mexico, most of the officers of our staff corps had never served a day with the troops; yet it is believed that the whole army will bear testimony to the zeal, skill, and efficiency with which they performed every duty which they were called upon to execute.

Question 3. Do the graduates of the United States Military Academy, as far as you know or believe, generally pursue their professional studies after entering their respective corps; and can you suggest a method which would, in your opinion, further stimulate to useful emulation and professional improvement among the junior officers of the Army?

Answer. It is believed that the graduates of the United States Military Academy *do not, generally*, pursue their professional studies to the extent it is desirable they should.

An obvious method "which would stimulate to useful emulation and professional improvement among the junior officers," would be to provide for *examinations* for promotion, as in the Medical Department of the Army, to successive grades, up to the rank of major.

To provide, however, a system of examinations which should be uniform, impartial, and, at the same time, efficient for a service as scattered as ours is would require great caution, and, after all, doubts would suggest themselves as to its practical working. It would require years before it could, under favorable auspices, be made to produce its full results; and a uniformity of administration of the War Department, which, shifting as is its head, might not be found.

Perhaps a mode involving fewer doubts, in practice, though less comprehension in working, might be suggested. The evil is believed to arise, in great degree, from the isolation of a large portion of the Army from society and the smallness of our military posts, and hence the want of that stimulus which the daily contact of officers with educated men of the world, with each other, and a participation in the ordinary pursuits of life, would supply. Add to this the difficulty of obtaining books at our small frontier posts, and the constant change of location incidental to service in our Indian territories.

The *concentration*, therefore, of our small posts into fewer large ones—a measure recommended on other grounds by a former Secretary of War (now a member of this Commission)—would be in itself one preliminary means towards stimulating study, and rendering examinations for promotion practicable. The officers of the staff corps find, to a certain extent, for the performance of their actual duties, the need of scientific study, which is little felt in the routine of company duty. The establishment of a school of practice for artillery at Fort Monroe, by the concentration of a large number of artillery officers, and the organization of a systematic course of instruction and practice; the collection of a military library, and of the material means for experiment, must tend most forcibly to diffuse knowledge in that branch of the service. Not only so, but since the larger portion of our artillery force serves as infantry, and all of it in turn serves its tour of duty at Fort Monroe, this school cannot but be widely influential in stimulating study throughout the Army.

Let an infantry and cavalry school of practice be established at some convenient point where two regiments could be concentrated, and let a course of study and practice be organized, embracing not only what is peculiar to infantry and cavalry, and the theory and use of small arms, but also all those subjects the knowledge of which is so important to line officers of our service, such as field fortification, survey, and reconnaissance of military positions, attack and defense of posts, &c.

The study which an officer can pursue by himself and while serving with troops on our frontiers is necessarily very limited; and even were his facilities greater, the knowledge acquired from mere book reading, disconnected from all application, is generally felt to be an inadequate return for the labor it costs. It is by bringing men together, encouraging communion of thought, stimulating emulation, and furnishing to the community plentifully the books and means of experiment and research, that knowledge is disseminated and its pursuit encouraged, and if we would stimulate our officers to study and disseminate knowledge throughout the service, we must act on these principles.

If such a school as we have indicated could be organized on any considerable scale, we should anticipate far wider results than would flow from a mere system of examinations.

F².

ARTILLERY SCHOOL,
Fort Monroe, Old Point, Virginia, August 17, 1860.

SIR: Colonel Dimick, commanding this school, handed me, with others (as captains), the following queries, viz:

"1. What modifications, if any, of the present mode of assigning cadets of the United States Military Academy to corps or arms would, in your opinion, be better adapted to the purpose of securing to each branch of the service the highest special qualifications, and to the Army the greatest general efficiency?"

"2. To what extent, if at all, would it be advisable, in your opinion, to require officers to serve in different corps or arms?"

"3. Do the graduates of the Academy, so far as you know or believe, generally pursue their professional studies after entering their several corps; and can you suggest a method which would further stimulate to useful emulation and professional improvement among the junior officers of the Army?"

"4. What modifications or changes in the organization and course of instruction at the Academy are, in your opinion, desirable to insure to the army officers best qualified to perform their various duties, and to meet all their responsibilities?"

To the first, I reply that I would, before assigning the graduate to arms or corps, give him a chance in the field, to show what sort of stuff he is made of. He may graduate head of his class, and yet be constitutionally too timid, nervous, or wanting in judgment for position in the highest army corps. Send him for two or three years to serve with cavalry and infantry on expeditions against the Indians before assignment.

To the second query, I reply that I think it would be of great advantage to the service and the officer to require the graduate to serve in the different corps for a term of years; especially is this necessary to the staff officer, who now goes direct from West Point and his books to the bureau or department at Washington, where he gradually becomes an adviser upon military matters of the Secretary of War and the President. The result is that the Executive will soon have no advisers from the field or regiments except an occasional line officer on a campaign at Washington, who not being responsible for suggestions, and not aware of the application made of them, the result is frequent and queer orders and counter orders, and special legislation in Army matters, to suit the interests of its advisers rather than the Army generally. After going through a course of field service with infantry and cavalry troops the graduate should be examined with a view to his permanent assignment to the corps for which his taste and capacity best fit him. Those who stand highest should have the right of choice, due regard being paid to the result of their West Point examinations. While the *man* was thus contending for a position he would learn something about that position. As it is now, the *boy* at West Point unwittingly fixes his future fate without knowledge of the corps to which he is to be assigned, and perhaps with tastes and capacities which

would insure him high honors in another and more suitable corps if he was allowed to know something of the service before being settled for life in it. During this initiatory course the pay of the graduate should not afford the means of extravagance or matrimony, which it now does.

To the third question I answer, no; and to insure study after graduating, some plan of assignment to corps after service and examination, or examination as to fitness before each promotion as high and to include the rank as major, is *absolutely necessary*. The latter system is found to work admirably in the medical staff, where it gives us physicians in whom we can confide, and a corps of gentlemen of which the Army is proud.

To the fourth query I reply that I think five (5) years is required at West Point to educate the officer, because—

Firstly. He is too young at 20 or 21 years of age for the high pay and responsible positions into which he is at once forced.

Secondly. Better have fewer graduates and leave some vacancies in the Army for meritorious soldiers as a reward for the distinguished and brave. Certainly there should be some reward to the men who among sixteen thousand are the best and bravest; and there is no incentive to valor like that of promotion. The Army already shows the good effects of the law for promotion from the ranks in the better material of which it is composed. Even if we do not, in a few cases, get such intelligent officers by this law, we get braver and more efficient men.

Thirdly. The cadet going to West Point from the sparsely populated West, has sometimes had no chance of obtaining a common English education, or his parents have been too poor to give it to him, hence test his *capacity* before he is rejected. For this purpose such candidates for admission who require it should have two or three months' course of instruction and recitations in arithmetic and English branches. Now the applicant, after five or ten minutes' examination on a few subjects, is often sent back home in disgrace, whereas in a couple of months he could show by his zeal and capacity a fitness for high honors which may have been opened to a stupid son of wealthy parents because he is just come from college.

Fourthly. The course at West Point affords very few facilities for obtaining practical knowledge, such, for instance, as that required to discover and work mines. The wonderful resources of the West in minerals demand that this knowledge should be had by the intelligent officer. Now he is sadly deficient in it, and there is no place where it could be taught better than West Point. The course is deficient in the practice of military surveying and mapping; very deficient in the use of instruments of every sort. My experience on the coast survey proved to me how utterly incomplete the West Point course was in this branch of science. If the Commission wish to test the efficiency of the graduates in the use of instruments ask some of them to take the necessary observations and determine the latitude and longitude of some point, or get one of them to make a survey with the theodolite and military map of the point. The graduate has learned to *copy* a map or draw heads in crayon from various masters, but few of them can accurately delineate a piece of ground before him. For such purposes a number of testing, surveying, and observing instruments, cheap enough to be used by tyros, should be purchased, and the nice instruments now in the Academy can be still kept, *as they now are*, for the use of the professors and their intelligent assistants.

When I joined, after graduating at the age of twenty, I found myself at once in command of a company in Florida; and in a few months performing, in addition (as well as I knew how), the duties of assistant quartermaster, assistant commissary, and commanding officer of a depot post. After some lessons from the ordnance, commissary, and quartermaster sergeants, I managed to make out my papers; but most of them came back as erroneous. This might partly have been prevented by a few lessons on military accountability, and a little practice in making returns, rolls, and reports at West Point.

In a word, the course of studies at West Point is now eminently theoretical. It should have one year devoted *entirely* to the use and application of the present four years of theory. The pure mathematics should be applied to useful machines—to the use of the instruments of the engineer, the miner, the surveyor, astronomer, and artilleryist. Topographical sketches should be made from nature; visits made to the nearest mines, foundries, arsenals, and powder works; journals and sketches of the routes and places visited made with care; and these, as well as all original maps, calculations, and other work done, should be certified to upon the honor of the signee as his own work, and no *copy*, and be submitted to the examining board, as a proof of the practical ability of the student, and the amount and quality of his *work*; and the cadet deficient in power to apply theory should be certainly rejected.

In my time at West Point I looked at a sextant and a theodolite, memorized from the book their adjustments, and had about as much idea of their use as an Indian has of watch making who has looked into a watch. I learned from a book the tests of various ores and minerals, and could not tell stone-coal from cinnabar; and I acquired more knowledge of cannon casting from an accidental visit to Kemble's foundry than from all the books in the course. So also with the course of artillery and infantry. I commanded a company on infantry drill once or twice; in other arms, never; and throughout the course but little care was taken to have me *apply* what I learned from print; for instance, I never was called on to *speak* French or listen to it *spoken*, though I recited upon grammar, *Leçons Françaises*, and *Gil Blas*; and have since learned more Spanish from Mexican señoritas in two months than I did French at the Point in two years. I recapitulate my suggestions:

First. Send all graduates, at once, to learn *themselves*, and the art of war where it is practiced—in the field.

Second. In two or three years examine them by officers of rank for assignment to corps and regiments.

Third. Have no promotion below the rank of major without a previous examination and rejection of the unworthy.

Fourth. At West Point, during the first two or three months, give the *poor* boys a chance to show that they can learn; and during the last year let the class prove what they can *do* with so much learning.

I am, sir, respectfully, your obedient servant,

E. O. C. ORD,
Captain Third Artillery.

Lieutenant J. C. IVES,
Secretary to Commission.

N. B.—I speak above of the course at the Academy from experience, and from what I see in recent graduates. In regard to selecting the staff from the Army at large, and for a term of years, I think the plan

would work well if the senior staff officers had no sons or relatives in the line, and if there was any likelihood of the selection continuing open to the whole Army *after* the sons of influential men now in the line should be selected.

Your obedient servant,

E. O. C. O.

F².

ARTILLERY SCHOOL, FORT MONROE, VIRGINIA,
August 20, 1860.

SIR: We have the honor to make the following replies to the questions proposed to the captains at this school by the Military Academy Commission:

To first question—

We are of opinion that the present mode of assigning cadets of the United States Military Academy to corps or arms is the best and fairest that can be devised.

To second question—

We are of opinion that, as each officer should have his specialty, service in different corps or arms would not increase his efficiency.

To third question—

We believe that officers who serve on the frontiers, and in the Indian country, do not, as a general rule, pursue their professional studies beyond the tactics of their arm. In a number of cases, this is owing to the want of books and other facilities for doing so. Transportation is frequently so very limited that not even *small* libraries can be taken along. Notwithstanding this, we are of opinion that the officers of our Army will compare favorably with those of other services.

To the question respecting modifications or changes in the organization and course of studies at the United States Military Academy, we reply that we think the *four* years' course preferable to the present five years' course. We are of opinion that more time should be devoted to military surveying and practical astronomy. A supply of cheaper instruments in these departments would afford the cadets a better opportunity of learning their manipulations, and thus becoming proficient in their use. In consequence of the small portion of time now given to the practical use of instruments, very few of the cadets, at the time of leaving the Academy, can make the necessary observations for conducting a military survey, and determining the latitude and longitude of a place.

Respectfully submitted by your obedient servants,

JOSEPH ROBERTS,
Captain Fourth Artillery.

JAMES B. RICKETTS,
Captain First Artillery.

Lieut. J. C. IVES,
Secretary to Military Academy Commission.

G².

WEST POINT, NEW YORK,
August 21, 1860.

SIR: In answer to the inquiry of the Commission in regard to the organization of the examining board to decide between the competitors

for promotion to staff corps of the Army, and referred to in my letter dated July 31, I would suggest a plan somewhat similar to that now practiced by the medical department of the Army under an act of Congress. All candidates for entrance into and promotion from one grade to another in that corps are examined by a board of Army surgeons; that is, by a board composed of members of the particular corps to which the candidate aspires. This I would recommend, with slight qualification, in the case under consideration. Whenever a vacancy occurs in any one of the corps referred to, the board should be detailed from that corps; and, as service with troops should be one of the indispensable qualifications for success on the part of the aspirant, I would add a member from the particular arm with which he had been serving. The number of members would, in some measure, be regulated by the necessities of the service at the time of organizing the board. I should think that two from the corps in which the vacancy occurs and one from the regiment in which the officer has served would be sufficient.

In respect to the examination for each grade of advancement to that of captain, I would recommend that the board of examiners be composed of three members, to be appointed from the regiment or corps to which the candidate belongs.

Very respectfully, your obedient servant,

S. COOPER,
Adjutant-General.

Lieut. J. C. IVES, U. S. A.,
Secretary to Commission.

H².

WATERVLEIT ARSENAL,
August 20, 1860.

MY DEAR SIR: I sent to Mr. Davis on Friday a duplicate of my answer to your circular, which I hope was received. I now inclose a copy of the programme drawn up by our board last spring, with remarks on the modifications which I would propose for a four-years' course.

Mr. H. Winter Davis asked me to state more fully my ideas with regard to the course of natural and experimental philosophy. It is difficult to do so briefly, as my notions involve a great change in the manner of treating the subjects of that course, and can only be carried out by means of new text-books, which it is useless and unreasonable to ask of a professor who has already prepared his books according to his own plan. My belief is, that the cadets really learn very little that is useful or practical in that course, and I am confirmed in this belief by what the graduates of the Academy tell me. They tell me that they studied "for the examination"; that is to say, they learned the mathematical formula, &c., with little definite notion of their meaning. Our board talked over this subject a good deal, but could see no way out of the difficulty except the compromise which they proposed—to give a popular knowledge of the elements of mechanics and physics to the whole class, and then apply the analytical method to the investigation of the phenomena which they had learned. In this way it was hoped that *all* would acquire a general knowledge of these phenomena, and the few who are capable of following the abstruse path of analytical investigation will be furnished with the clue for doing so. Genêt's or Silliman's book was mentioned rather as an illustration than a precise example. I

should wish to use a book in which the principles of mechanics were more fully developed by means of the geometrical method, and I would not require the lower half of the class to study the analytical method at all, nor even to prepare for that study by previously studying the higher mathematics. My system is based on the simple notion of graduating as many as possible of those who enter who exhibit the requisite intelligence, character, and ability to make useful officers in the corps for which they are recommended. The other plan of pushing the instruction of *all* to the highest point that *any* are capable of attaining, is founded on the principle of selecting the best talent of the country for the Military Academy, and is, I fear, impracticable. Still, if the *political* gentlemen say so, I am very willing to see it tried.

Please let me know if you receive my communication this time.

Yours, respectfully,

A. MORDECAI,
Major, Ordnance.

Lient. J. C. IVES, &c., &c.

Mathematics.	Descriptive Geometry.	8 to 11, daily.	First term.	11, first sec. 174 25, last sec. 117 31, first sec. 130 28, last sec. 74	The programmes in these subjects are adopted in all their parts as now taught.
	Shades and Shadows.	do.	do.	28, last sec. 74	
	Analytical Geometry.	do.	do.	56, first sec. 297 48, last sec. 189	
	Calculus.	do.	Second term.	58, first. 290 194, last. 194 133. 133 89. 89	
French.	Surveying.	do.	do.	17. 17	Present programme in French adopted, as much being taught in fourth (fifth) class as time will allow, the remainder in this class.
	First and second terms.	11 to 1, daily, except Saturdays.	First and second terms.		
	Composition and Declamation.	11 to 1, Saturdays.	do.		
Drawing.	Composition and Declamation.	2 to 4, daily.	do.	92. 92	The first term being devoted to elementary principles and sketching from models, including the human figure. The second term devoted to landscape drawing with pencil, brush, and pen, from models and from nature.
Fencing and Military Exercises.		4 to 5, every other day.	Nov. 1 to Mar. 15		

Natural and Experimental Philosophy.	Mechanics.	8 to 11, daily.	First term.	80. 80	Instruction in these branches to be on a system and method similar to that of Ganot's "Traité Élémentaire de Physique," or Silliman's "First principles of Physics or Natural Philosophy." (Omitting all propositions relating to molecules, and also the several propositions noted as now omitted in the programme and text books handed to the board by the professor, with such others as may be found expedient on a more thorough examination of the detailed programmes.
	Hydrostatics.	do.	Second term.	55. 55	
	Hydraulics.	do.	do.	30. 30	
	Optics.	do.	do.		
Chemistry and Mineralogy.	Acoustics.	11 to 1 or 2 to 4, every [other] day.	First and second terms.		Present programme adopted, and the time gained to be devoted to experiments and to shortening the lessons. Alternates with Drawing or Riding.
	Gases.	2 to 4, every other day.	do.	92. 92	
	Heat, &c.	do.	do.		
	Electricity.	do.	do.		
Riding.	Mechanics of Solids (lyrical.)	11 to 1, Saturdays.	[First and second terms.]	[34, 17 of each.]	Twelve lessons in Architectural Drawing from models and 84 in Topographical Drawing with pen and brush, including sketching in the field. Alternates with Chemistry. [Every Saturday, 11 to 1, devoted to Composition in the Academy, from readings by the professor.]
	(Spherical) Astronomy with explanation of instruments.	2 to 4, every other day.	First and second terms.	185. 185	
	Chemistry and Mineralogy.	do.	do.		
		11 to 1 or 2 to 4, every [other] day.	do.		
Military exercises or Drills.		2 to 4, every other day.	do.		Instruction same as now, [and to attend on the same day instruction is given in Drawing.] Same as now.
		11 to 1, Saturdays.	[First and second terms.]	[34, 17 of each.]	
		2 to 4 or 11 to 1, every other day.	First and second terms.	92. 92	
		4 to 6. 4 to 6.	do.		

Programme of the course of studies at the Military Academy, as adopted by the board to revise the programme, &c.—Continued.

Class.	Subject.	Hours of the day.	Periods of the year.	Number of lessons.	Number of pages.	Present programme.		Remarks of the board.
						Number of lessons.	Number of pages.	
FIRST [SECOND] CLASS.	Engineering.							
	Civil Engineering.....	8 to 11, daily.....	First term.....	72.....		72.....		Present programme adopted, omitting, in Civil Engineering, articles 5, 6, 7, 8, 9, 42, 44, 46, and 47. Stereotomy (except for the first section) Nos. 26 and 27. In Military Engineering (except for the first section), Nos. 5, 6, 7, 8, 9, and 10.
	Military Engineering and Science of War.	.....do.....	Second term.....	57.....		57.....		
	Law.....							
	Mineralogy and Geology } Practical Engineering.... }	11 to 1, every other day.	First term and from May 10 to 31; April 10 to May 10.	52.....		22.....		Present programme adopted.
	Tactics.							
	Tactics of infantry... } Artillery and Cav- } alry..... } Veterinary Art..... }	2 to 4, every other day.	Sept. 1 to May 10	84 days.....		62.....	630..... 538..... 138.....	
	Ordnance and Gunnery...	11 to 1, every other day.	Second term...	58 days.....		58 days.....		<i>An unnecessary length of time appears to be given to RECITATIONS in Tactics; a month or more of these hours might be bestowed on Science of War, or on instruction in use of astronomical instruments.</i>
	Riding.....	2 to 4, every other day.	First and second terms.	92 days.....		105.....		
	Military Exercises (Drills).	4 to 6, daily.....	.....do.....					
FIRST CLASS.	Moral Science.....			10.....				Omit.
	Constitutional and International Law.	8 to 11 a. m., daily, from Nov. 1 to Jan. 1, and every other day from January to June.	From Nov. 1 to May 31.	22.....		22.....		Transfer to fourth year.
	Military law.....			20.....		23.....		First year.
	History.....			60.....		69 to whole corps.		Omit.
	Spanish.....	2 to 4, daily.....	First and second terms.	218.....		185.....		

FIRST CLASS—Continued.		8 to 11, every other day.	Second term 60	.....	.....	Fourth year.
Science of War .....		.....	.....	.....	.....	Fourth year.
Practical Engineering ..		.....	.....	.....	.....	Fourth year.
Practical Astronomy ...		8 to 1.....	September and October.	.....	.....	Third year.
Geodesy .....		.....	.....	.....	.....	.....
Instruction in Small Arms.		11 to 12, every other day.	From Nov. 1 to May 31.	.....	.....	Camp, third year.

Practical instruction in this class shall be given as officers and instructors, by regular details for the infantry, cavalry, and artillery drills, such that every member of the class shall have the same opportunity of instruction.]

JAMES B. FRY,
First Lieut. 1st Artillery, Recorder.

The alterations of the above programme in *italics* indicate the changes which I will propose in the arrangement of studies, in conformity with my opinion that the course should be limited to four classes, and that better preparation should be required before entering the Academy. The particular assignment of hours of the day for different studies may, perhaps, require some alteration, with reference to the number and convenience of instructors in the several departments; but I believe they do not interfere with each other. Instruction in riding, small-arms, and gymnastics may be partly given during the encampment.

AUGUST 20, 1860.

A. MORDECAI, Major Ordnance.

1².

FORT MONROE, VIRGINIA,

August 21, 1860.

SIR: To the first and second interrogatories of your circular letter of July 18, I answer:

Up to the grade of captain, consider the officer to be temporarily assigned, and subject, according to speciality or qualification, for duty with any corps, qualification and speciality to be determined by examinations, not exceeding one in any one year.

To the third interrogatory—

Examinations, and nothing else but examinations, for promotion to the several grades from second lieutenant to major, will secure to the Army all the benefits it ought to derive from the Academy.

The twenty or more years which follow graduation are generally lost years.

Regarding changes or modifications in the course of instruction—

I would add a special and distinct department of military history, army administration, law military, law international, the military geography of the United States, and the current field operations, on the ground, of surveying, reconnaissance, throwing up field works, with illustrations, on the ground, of strategy and the tactics of battles, the course to embrace the fourth and fifth years.

Respectfully, your obedient servant,

THOMAS WILLIAMS,

Brevet Major, Captain Fourth Artillery.

First Lieut. J. C. IVES,

Secretary U. S. Military Academy Commission, &c.

K².

FORT MONROE, VIRGINIA,

August 22, 1860.

SIR: The commandant of the artillery school not deeming the communication which you addressed to the staff of the artillery school a proper subject for the consideration of that body, I shall take the liberty (presuming the object of the communication was to elicit, as far as possible, the views of the officers on the several subjects mentioned in the circular) of submitting my individual views upon the several questions propounded.

First. In respect to the circular dated the 18th of August, and which has reference to modifications in the organization and instruction, &c., of the Military Academy. In respect to its organization, I should recommend that hereafter all of the professorships, as they may become vacant, be filled by selection from the Army; and that the professors retain their rank in their respective corps, and be entitled to promotion the same as if on duty with them. I think that this change will have a tendency to increase the military spirit of the Academy.

Second. I would recommend that, as far as practical, the course of studies be adapted to the wants and requirements of the several corps to which the graduates will probably be assigned. I would not omit any part of the present course in mathematics, engineer, or in natural philosophy in the instruction of the upper sections, or for those cadets

which may probably be assigned either to the engineers, ordnance, or artillery. In the lowest sections, or those from which the cavalry and infantry officers will be selected, I think that the course in these several subjects may perhaps be considerably curtailed.

In several of the departments considerable change has been made since I was connected with the Academy. To what extent these changes and modifications may have been carried I am not sufficiently informed to give an understanding opinion as to what other changes may be necessary. I venture, however, to suggest the following points for consideration: In the department of drawing I should limit the instruction to military and mathematical drawing. The cadet should be able to *read* a topographical map at a glance. In the department of English studies, military history should constitute an important item. The department of ordnance, gunnery, &c., with all the instruction in artillery, should be united under one head, as should be also the case with cavalry and infantry.

The course lately introduced in the department of tactics should be very much extended, and should be made to include strategy, grand tactics, minor operations of war, army organization, and the principles of military geography. It should also combine with these a historical and critical account of some of the principal campaigns. In order to accomplish these ends the course will have to be rearranged, and much more time allotted for its instruction. These subjects are all highly important in themselves, and the instruction in them constitutes an important element in all of the first-class military schools in the world. Their study has only recently been made a part of the course at the Military Academy. The subjects are but little understood in the Army.

I would also suggest that all of the practical instruction in riding, &c., be given after the close of the academic day. My experience has fully convinced me that the introduction of it during study hours is highly detrimental to study, it having a tendency to distract the attention from that close application indispensable to the comprehension of the abstruse subjects studied at the Academy.

Again, I would recommend the abolition of the study of those subjects to which only a few lessons can be given. Whatever is undertaken at the Military Academy should be thoroughly and completely taught, otherwise it had better be omitted altogether, as it is sure to be soon forgotten.

A sufficient time should be allowed to acquire a thorough knowledge in all of the branches of knowledge which it may be deemed necessary to teach at the Military Academy. The number of years required for this is a minor consideration. In all other professions the student is compelled to undergo a special instruction after completing his collegiate course; why should he begrudge the time necessary to acquire a knowledge of the most difficult of them all—that of arms?

Having devoted so much space to the answer of your communication of the 18th August, I shall have to be very brief in my reply to your circular of the 23d July. In reply to your two first questions, I would suggest that all of the graduates assigned to the staff corps should be required to serve three years in the line of the Army, and as far as practical in the field, previous to doing duty in their corps.

I reply to your third question, as far as my experience extends, that in general the graduates do not pursue their professional studies after entering the Army. This, in the line of the Army (to which my experience is principally confined), is caused, in part, by the want

of the proper means in doing so. I should recommend that libraries be established at the principal posts, especially on the frontier, and that hereafter all lieutenants, whether appointed from the Military Academy, civil life, or promoted from the ranks, be subjected, after remaining in the Army five years, or previous to being promoted to captains, to an examination by boards composed of officers of their particular branch of service on such subject and in such text books as the War Department may from time to time prescribe; that no lieutenant be promoted without passing this examination satisfactorily, and that appointments to position in the Adjutant General's Department, Quartermaster's Department, and the Commissary Department, be confined to such lieutenants as may have passed satisfactorily this examination.

Lastly, I would recommend the establishment of special schools for instruction in artillery, cavalry, and infantry.

I am, sir, very respectfully, your obedient servant,

I. VOGDES,
Captain, First Artillery.

Lieut. J. C. IVES,
United States Army.

L².

DETROIT, August 30, 1860.

SIR: Absence on duty from this place has delayed till this date the receipt of your communication of the 23d ultimo. In compliance with your request, I transmit replies in writing to your several interrogatories.

Interrogatory No. 1:

I consider the present plan of assignment of cadets to corps objectionable, inasmuch as it makes a distinction between the Corps of Engineers, Topographical Engineers, and Ordnance, not warranted by the duties the officers of these several corps are called upon to perform. In my judgment the natural capacity and acquired knowledge required of the topographical engineer and ordnance officer should be of as high an order as that required of the engineer officer. At the same time, as it is necessary some rule should be adopted, I would propose, in lieu of the present plan, the assignment each year in rotation of the senior graduates to each of these corps. By this method the talents and knowledge possessed by each corps would in time become more equalized, and thus "each would secure the highest special qualifications, and the Army the greatest general efficiency."

Interrogatory No. 2:

I am clearly of the opinion that the efficiency of each corps and arm of the service would be impaired by requiring "officers to serve in different corps or arms."

Prior to 1838, this was the system in a measure adopted, and I have always understood the present organization was brought about in consequence of the defects of the previous system.

I am free to admit that, if it were practicable for officers in a limited time to become experienced in the duties of each corps and arm, that then the general efficiency of the Army would be promoted by transferring from one corps to another.

But is this practicable? From my own experience in my present

corps, I should unhesitatingly answer in the negative. I have for nineteen years held a commission in the Topographical Engineers, and have during the whole of that time been actively employed, and yet there are many duties which are assigned to my corps that I have never been called upon to perform, and to execute which efficiently would require time and study on my part. It is not probable, therefore, that I could have obtained even the experience and practice I have as a topographical engineer if I had been employed any considerable part of these nineteen years on other special duties. Of course my remarks apply to the three special corps, requiring on the part of the officer for the proper discharge of his duties a practical knowledge of science, over a very wide range, a knowledge of the use of instruments, of the details of construction, and of materials, only to be acquired by long service; and what is most essential, and calls for continued and uninterrupted study on his part, is to keep himself familiar with the progress of and the improvements constantly being made in the varied branches of his profession.

When reference is had to the arms of cavalry and infantry, and the general staff corps, where the duties are more similar and homogeneous, I think it very probable a transfer of officers from time to time would tend to the general efficiency of the service.

Interrogatory No. 3:

I am not able to speak from any knowledge, and my belief is founded more on what appears reasonable and natural than from any actual experience, when I say that, exclusive of the special corps requiring study to enable them to discharge their duties with credit, the graduates, as a general rule, do not, after graduation, pursue the studies taught them at the Academy. The officers in what is called the line of the Army, immediately after graduation, are called upon to enter the arduous duties incidental to a frontier life. Scattered over an immense tract of country, separated into small commands, constantly moving and expecting to be moved, removed from books, and with no association outside of their garrisons and camps, and most generally in a state of quasi war, is it to be wondered that graduates cease to be students? That there are exceptions, and many exceptions, to what I call a general rule, I am well aware. The roster of the assistants at the Military Academy, the records of the Coast Survey, and of the Pacific Railroad explorations, the reports of marches of columns over the plains, the numerous professional books published by officers, and other evidences exist to prove that many officers in all branches of the service not only pursue their studies, but do so with great credit to themselves, their profession, and their *alma mater*. Still, if these names are carefully called from the register, it will be found, I opine, that they are in the minority; and the reason is, not from any want of professional pride, but, as I have stated above, from the want of time and opportunity, and in some measure from a failure to realize the immediate advantages to be derived from the labor of study.

I do not wish to make any invidious distinction, and hence I am free to say that I do not think, as a general rule, the officers of the special or scientific corps study any more over and above what they are compelled to do than those of other branches of the service. To remedy this evil—for evil it undoubtedly is—I would suggest making promotion dependent on merit; that is to say, require officers to be examined and exhibit proficiency in the theoretical and practical duties of their profession, and show a record of good service, before promoting them to a higher grade. Objection may be made to this plan that all officers

are not equally well and advantageously situated for acquiring knowledge; that while some are on the frontier actively employed, away from sources of information, others are enjoying the privilege of being in their midst. This can be avoided by arranging the details of service, so that those who are approaching promotion can have an opportunity of preparing themselves for examination. This system is already in existence in the medical staff, and, I believe, practically works well. There is no reason it should not work equally well when applied to other corps or arms.

Much care and study should be devoted to devising the details of such a system, and all officers should know clearly in advance upon what subjects they are expected to be proficient, and these subjects would vary with each corps. "A stimulus would then be given to useful emulation and professional improvement among the junior officers of the Army," in which designation I would include the grade of captain. Having thus, sir, answered, to the best of my ability, your several interrogatories, I assume the liberty of adding a few remarks, which, I trust, will not be considered out of place, though not particularly called for by your letter.

I believe the system of education at West Point, for a theoretical one, and for the time devoted to it, is generally admitted to be in a high degree efficient. Whether it can be made more efficient, what time and what additional studies are required to render it so, I take it, are questions to solve which is the design in organizing your honorable Commission.

In this view, permit me to suggest a particular branch of study which my experience as a topographical engineer satisfies me should have more attention paid to it, if possible, than has hitherto been given. I refer to the subject of *practical astronomy and geodesy*. It is not necessary to call your attention to the fact that of recent years several disputed boundary questions have turned upon astronomical problems, and that in each case the corps of topographical engineers have been charged with the requisite determinations for their solution. I refer to our northeast and northwest boundaries with Great Britain, and our southwest boundary with the former Republic of Texas, and subsequently with Mexico. I would also refer to the case of Rouse's Point, where an erroneous astronomical determination caused a fortification to be commenced in what was afterwards ascertained to be foreign territory, and which was only reclaimed by compromise in a subsequent treaty.

I quote these facts to prove that practical astronomy is not merely a branch of scientific study, which it would be advisable to teach cadets at the Military Academy, but to prove it is a subject of direct practical bearing upon the duties of a portion of the graduates, and that upon the correct discharge of these duties are dependent international relations.

The importance of this study being demonstrated, the question arises, what modification can be made of the existing system of instruction to enable its introduction? For this purpose I would propose the establishment of a department with this title; the officer assigned to it having the charge of the observatory and instruments, and a portion of the last year assigned for the instruction of the graduating class in the use of the instruments and application of the formulæ in the determination of the principal questions involved in practical astronomy and geodesy. In addition to the benefit to the cadets to be derived from such a department, the officer in charge of the observatory should also be re-

quired to make such observations as are constantly being required for co-operation with parties in the field, making geographical explorations, running boundary lines, &c. And for this purpose I would suggest that graduates assigned to the topographical corps should be retained at the Academy at least one year to act as assistants and computants at the observatory and perfect themselves in a knowledge of practical astronomy. I propose the establishment of a separate department, on the ground and in the belief that the present distinguished professor of natural philosophy is overtaxed in the demands on his time instructing the theoretical branches of his important course, and if he were not, from my personal knowledge of the subject, I am satisfied that any one taking charge of the observatory and properly managing it will be fully occupied day and night, and it will not be in his power to attend to other matters. Whether the instructor of practical astronomy and superintendent of the observatory should be an officer of the Army or member of the civil staff of the Academy I leave to the Commission to decide. The only point I wish to impress upon it is the great importance and value of the department. When I spoke of co operating with parties in the field I referred to corresponding observations to be made for longitude, which, now, we are obliged to get from one of our college observatories or refer to the royal observatory at Greenwich. At the present moment I have just received from the observatory of Harvard University a list of the corrections to be applied to the catalogue declinations of stars for use in the latitude observations of the survey of the north and northwestern lakes, which corrections are derived from the actual observations at Harvard. This work could readily be executed at the West Point observatory.

It seems hardly necessary to dilate on the many advantages to be derived from the proposed plan. Indeed I feel somewhat diffident in alluding to this and the other matters in this communication, being satisfied they have already presented themselves to the Commission; but appreciating the compliment paid me in asking my views, I have not hesitated to express them freely, though hastily, in the hope that, possibly, some additional argument may be advanced to strengthen what perhaps is already decided upon.

Again expressing my regret at the delay in the receipt of your communication, I remain, most respectfully, your obedient servant,

GEO. G. MEADE,

Captain, Topographical Engineers.

Lieutenant J. C. IVES,

Secretary U. S. Military Academy Commission.

M².

DETROIT, MICHIGAN, *September 3, 1860.*

SIR: In consequence of absence from home, your letter of the 23d of July was not received by me until a few days since, and now my duties requiring me again to journey, I find myself unable to give the attention which is requisite to the subjects upon which you request my views. But that I may not appear discourteous, I will briefly state such answers as occur to me in reply to the questions specified.

First. In regard to modification in the present mode of assigning cadets, I would respectfully suggest that the two corps of engineers should be placed upon an equality as close as that which exists between the

first and second regiments of cavalry, and cadets recommended for one corps of engineers should be recommended for the other corps also. This is manifestly just, so long as the duties of the two corps remain exactly the same, or may continue to be equally scientific.

I would suggest the propriety for assigning cadets to corps at the end of the fourth year's course. During the fifth year, while continuing the study of military science as a class, let them act as assistant instructors in the corps to which they have been assigned, under the direction of an officer of that corps, who shall also instruct them in the highest branches pertaining to their special profession. At the end of the fifth year's course the cadet's corps rank may be determined in accordance with his merit.

The science of fortifications, practical astronomy, and surveying, including the highest branches of geodetic operations, should each favor a separate department, for the control of which selections should be made in turn from officers of each corps of engineers.

To create at West Point a special department for every corps there represented cannot fail to have a beneficial influence upon the Army. There would be an effort among officers to fit themselves for those positions, and while there they would acquire, by their researches, much information, which would be not only taught at the Academy, but, upon joining their regiments or corps, would also be disseminated throughout the Army.

Second. I have no doubt that it would add to the efficiency of each officer if he could serve for a short period with every corps of the Army; but I can think of no plan by which this would be practicable.

Third. It is my opinion that graduates generally do pursue, to a considerable extent, their professional studies after entering their respective corps. I have no doubt, however, that examination before promotion to a higher grade in the Army, such as is practiced by the medical corps, would stimulate to useful emulation and professional improvement among junior officers. Yet strong objections might be raised against such a practice, inasmuch as officers of the same grade would not have similar advantages for the prosecution of their studies.

Very respectfully, your obedient servant,

A. W. WHIPPLE,

Captain, Topographical Engineers.

Lieutenant J. C. IVES, *Top. Eng.,*

Secretary Military Academy Commission.

N².

SAN ANTONIO, TEXAS,

August 31, 1860.

SIR: I have had the honor to receive your letter of the 18th ultimo, requesting me, in behalf of the United States Military Academy Commission, to state for their information what modifications or changes in the organization and course of instruction at the Academy are, in my opinion, desirable to secure to the Army officers best qualified to perform their various duties and to meet all their responsibilities.

I cannot hope to add anything to the information that will be acquired by the Commission in their investigations at the Academy, or to the facts that will be developed as to the accomplishment of the objects of the institution, and will therefore briefly state such opinions as I

have formed from my knowledge of the Academy and the wants of the military service.

Beginning at the low standard of qualifications of admission into the Academy, a course of instruction limited to a term of four years is not sufficient, I think, to impart the knowledge necessary to an officer for the performance of the duties of his station, and to secure that desire for further information which ought to be a great object of his education.

If, therefore, the present standard of admission is maintained, the instruction at the Academy will have to be limited to a military education, and the knowledge of the arts and sciences connected with it; the instruction of the officer to be prosecuted afterwards at schools of application, where he can study the higher branches of the art of war, and learn to apply his knowledge to practice. He would thus become confirmed in the habit of study, and be made to understand that his military life must be one of continued research and application. Such a system of instruction would secure to the officer the highest military education, exclude no class of citizens from the military service, and would maintain the Academy as at present, a truly national institution.

But, under this system, I think no cadet should be admitted into the Academy under seventeen years of age, and that the qualifications of admission might be made to embrace some knowledge of geography and the English language. A reasonable degree of education in the candidates ought to be expected. The country affords ample opportunities. The standard of education in all the schools is advanced. The minds of the scholars are better disciplined, their habits of study and thought improved, and it is as easy now to acquire an ordinary English education as it was at the time of the establishment of the Academy the present qualifications for admission.

But if schools of application are not established, and the education of the officer is to be completed as well as begun at the Military Academy, a course of instruction of five or six years will, in my opinion, be requisite for the education of an officer. There are objections to an increase of the term at the Academy, both on the score of expense in the education of the cadet and the effect of protracted study and confinement, in not the most favorable climate, upon his constitution and character. But the expansion of science and the extension of the art of war render an increase of time and application, either at the Academy or after graduation, necessary.

Should the academic term be increased to a period longer than four years, I would suggest that the age of the cadet at his admission be limited between sixteen and eighteen years. The other qualifications, as at present established, and the completing courses at the Academy should combine application and practice to instruction.

I am, very respectfully, your obedient servant,

R. E. LEE,

Bvt. Col., Lieut. Col. Second Cavalry.

Lieutenant J. C. IVES, *Top. Eng.,*

Secretary U. S. Military Academy Commission.



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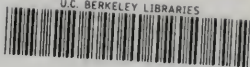
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